

This paper discusses a class of infinitival adnominal modifiers illustrated in (1):

- (1) a. Give me a Fedex number [to return the package].
b. This is the money [to buy a newspaper].

These are similar to infinitival relative clauses, although without an overt gap corresponding to the head noun (*Fedex number, money*). Nonetheless, the modifier is interpreted as if it contained the gapped constituent [*with* ___], with the head noun linked to its missing complement. Although similar to Japanese/Korean gap-less relative clauses (Matsumoto 1989, 1997), this construction is atypical for English and indeed overlooked by otherwise thorough treatments of English adnominals (Sag 1997, McCawley 1988, Quirk et al 1985, Huddleston & Pullum 2002), despite its frequent occurrence in our corpora, where we discovered the construction while building a dynamic treebank (Oepen et al 2002) for the LinGO English Resource Grammar (ERG, a broad-coverage implemented HPSG), a point we'll return to shortly. Superficially, this construction is similar to gap-less verbal purposives:

- (2) Kim left to see Sandy.

However, like most verbal adverbials, purposives typically require control of the infinitival subject by a sentential subject (e.g. *Kim*), whereas in (1) the infinitival subject can be controlled arbitrarily (like other infinitival adnominals). Furthermore, these constructions are restricted to instruments; other covert gaps are ungrammatical:

- (3) a. comitatives: I saw the man to travel *(with).
b. governed prepositions: I read the book to talk *(about).

(We confirm these observations by extracting relevant examples from the British National Corpus.) Reason-infinitivals (4a) (Lasnik 1987) and temporal/locative modifiers (4b) appear to involve similar constructions:

- (4) a. the reason to leave
b. the place/time to talk

However, the limited lexemes that may head these constructions suggest analyses as special proforms (*reason*) or gapped nominals (e.g., suitably modified, (*time*) can serve as an NP adverbial), neither of which accounts for the productivity of the instrumentals.

We analyze sentences like (1) in the ERG via a syntactic construction that takes an infinitival VP as its only daughter, constructs an N'-modifier, and introduces a *with* predicate into the semantics, coindexing its sole argument with the modified noun. That the predicate is restricted to be *with* rules out examples like (3a,b). That it is introduced constructionally, at the top of the clause, where only the highest verbal predicate is visible, predicts that long distance dependencies are disallowed:

- (5) a. #This is the number to think Kim called Sandy.
b. #This is the number to try to call Sandy.

Finally, our identification and method of analysis of this construction illustrate one potential contribution of grammar engineering to (theoretical) syntax. As noted, we discovered these examples while building a corpus-based treebank by manually selecting among candidate parses produced by the ERG, which assigned these constructions syntactically available but pragmatically implausible parses involving gapped subjects (e.g. *the number_i [_i to call Sandy]*). Applying broad-coverage grammars to corpora with manual inspection of both parsed output and unparsed sentences is a valuable linguistic tool, providing a means of discovering previously unanalyzed constructions while serving as a crucial step in extending the coverage of implemented precision grammars.