Prenominal Adjective-Complement Constructions in English

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1 Introduction

In general, prenominal adjectives in English do not take complements. However, in the construction below in (a), it appears that the CP[1] *to crack* receives a thematic role from the adjective *tough*, suggesting that it is base generated as a complement of *tough* and later moves to its observed position following the noun, *nut*. The (b) example shows that the CP may also remain in situ[2].

(1)   a.   a tough nut to crack
       b.   a tough-to-crack nut

Different adjectives pattern differently with respect to this construction. For instance, *tough* clearly allows both the A N CP order and the A CP N order, but *strange* allows only the A N CP order, and *ready* allows only the A CP N order:

(2)   a.   a strange pet to own
       b.   *a strange-to-own pet

(3)   a.   *a ready pet to own
       b.   a ready-to-own pet

Other contrasts in acceptability are dependent on the choice of verb in the CP. While (a) is not perfect, it is certainly better than (b), which is completely impossible:

(4)   a.   ?a certain-to-break toy
       b.   *a certain-to-own pet

I tentatively propose two restrictions to account for this pattern. The first, which I will call the **CP-Licensing** restriction, is that the CP must have the same structural properties as a

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[1]I refer to this as a CP rather than a TP because examples like *a tough nut for me to crack* are also possible, though I will not discuss them here at any length.

[2]Though this is subject to restrictions on heaviness: the heavier the CP is, the less acceptable the A CP N order becomes.

CP that would be selected by the A in its predicate, rather than prenominal, version. That is, (1b) is licensed for the same reason that (5) is, and (4b) is not licensed for the same reason that (6) is not:

(5)   This nut is tough to crack.

(6)   *This pet is certain to own.

Secondly, the **Object Gap** restriction is that the A N CP order is only licensed when the CP contains an object gap that is coreferent[3] with the N. Thus (1a) is fine because *nut* is in some sense the object of *crack*. But (7a) is bad (though (7b) is at least marginally acceptable) because *dog* can only be interpreted as the subject, not the object, of *howl*:

(7)   a. *an eager dog to howl
       b. ?an eager-to-howl dog

In the rest of this paper, I will sketch the behavior of several classes of adjectives and consider to what extent they adhere to these restrictions.

2   Adjective classes

2.1   Tough Movement adjectives

The adjectives that occur as tough-movement predicates - e.g. *tough, difficult, easy* - also quite generally occur in the prenominal adjective-complement construction under consideration here[4].
    As long as CP-Licensing is met, the resulting tough-nut construction will be grammatical, regardless of whether the order is A N CP or A CP N:

(8)   a.   This rug is easy to clean.
       b.   an easy rug to clean
       c.   an easy-to-clean rug

But when CP-Licensing is not met, that is, when the CP would not be licensed as a complement of the A in its tough-movement predicate context, neither order is possible. The result is that no intransitive verb, whether unergative or unaccusative, may be embedded in the CP if the matrix A is in the *tough* class:

(9)   Unergative:
       a. *This dog is tough to howl.
       b. *a tough dog to howl

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[3]In general only DPs can refer, not Ns, so "coreference" may be a misleading term for this relation. What I mean by this is just that the N in some sense determines the interpretation of the gap.
    [4]In fact, they comprise the canonical case, so that I may sometimes refer to this as the *tough nut* construction, even if the adjective involved in a particular case is not of the *tough* class.

      c. *a tough to howl dog

(10)   Unaccusative

      a. *This tree is tough to fall.
      b. *a tough tree to fall
      c. *a tough to fall tree

Note that these data are perfectly in line with the Object Gap restriction as well, since any CP that satisfies CP-Licensing will necessarily have an object gap, and thus be eligible to move to the right of the N. But though Object Gap is not contradicted by the *tough*-class facts, its application is redundant here. So these data do not offer any evidence for the necessity of Object Gap.

2.2   Raising to Subject and Subject Control adjectives

Raising to subject adjectives, like *certain* and *liable*, do not allow CP complements with transitive verbs, at least when the N corefers with an object gap.

(11)   Transitive - Object gap

      a. *This pet is certain to own.
      b. *a certain pet to own
      c. *a certain-to-own pet

But if the verb is intransitive, or transitive with a subject gap instead, the A CP N order may be marginally possible:

(12)   Transitive - Subject gap

      a.   This dog is certain to bite you.
      b. *a certain dog to bite you
      c. ?a certain-to-bite-you dog

(13)   Unergative

      a.   This dog is certain to howl.
      b. *a certain dog to howl
      c. ?a certain-to-howl dog

(14)   Unaccusative

      a.   This toy is certain to break.
      b. *a certain toy to break
      c. ?a certain-to-break toy

The pattern is essentially the same for Subject Control adjectives like *eager*. The only difference is that *eager* has an additional requirement that the N be animate and sentient, that is, that it be capable of experiencing eagerness. But this follows straightforwardly from CP-Licensing, since an inanimate subject is not possible in the predicate context either:

(15)   Inanimate

    a. *This toy is eager to break.
    b. *an eager toy to break
    c. *an eager-to-break toy

(16)   Animate

    a. This passenger is eager to arrive.
    b. *an eager passenger to arrive
    c. ?an eager-to-arrive passenger

Although the (c) examples are at best marginal for both the Raising to Subject and Subject Control adjectives, I believe there is still some contrast in their acceptability as opposed to that of the (b) examples. It is also possible to improve them somewhat through embedding in a superlative context:

(17)   a. ?a liable-to-bark dog
    b. the least liable-to-bark dog I've ever met

Note that it does not help to make it superlative when CP-Licensing is violated, as it was in (11):

(18)   a. *a certain-to-own pet
    b. *the most certain-to-own pet I've ever met

If we accept on this basis that A CP N order is in fact possible with Raising to Subject adjectives, then for transitives and unergatives, the data above follows from our restrictions. Neither order of the CP is possible if CP-Licensing is violated, as in (11). When the CP is properly licensed, as in (12-13), the order A CP N is allowed, but because these CPs cannot have a object gap, the Object Gap restriction prevents them from moving rightward to produce the A N CP order.

It is a little strange, however, that the same pattern should hold for both unergatives and unaccusatives here. Unaccusative verbs are hypothesized to have no external argument, so that their surface structure subjects must have raised to Spec-TP from an underlying object position. This means that in *a certain-to-break toy*, for example, *toy* is in some sense the object of *break*. Thus under the current formulation of Object Gap, it is predicted that the order A N CP should be possible for unaccusatives but not unergatives when the matrix A is a Raising to Subject predicate.

There are a number of possible revisions that could be made to the Object Gap restriction to account for this. For instance, it might be that rather than a requirement that there must be an object gap, there is in fact a requirement that there must not be a subject gap. This would rule out A N CP with unaccusatives because though *toy* corefers with the deep structure object of *break*, that object must raise to subject position. Thus *toy* will end up

coreferring with both subject and object, and a No Subject Gap[5] restriction would rule it out on the basis of the former.

The only reason not to wholeheartedly adopt the No Subject Gap restriction is that there is one exceptional case where an adjective does allow A N CP with unaccusatives, but not with unergatives. This is the case of *unlikely*, and I will discuss it at some length below.

3 Exceptions

3.1 *Unlikely*

Unlikely is a Raising to Subject predicate, and thus we should expect it to behave like *certain* and *liable* when it occurs in a tough-nut context. However, this is not what happens:

(19) Transitive - Object gap

  a. *This pet is unlikely to own.
  b.   an unlikely pet to own
  c. *an unlikely-to-own pet

(20) Unergative

  a.   This dog is unlikely to howl.
  b. *an unlikely dog to howl
  c. ?an unlikely to howl dog

(21) Unaccusative

  a.   This river is unlikely to freeze.
  b. ?an unlikely river to freeze
  c. ?an unlikely to freeze river

It is only with unergatives, as in (20), that *unlikely* behaves like other Raising to Subject adjectives. In (21), it appears that both orders A N CP and A CP N are marginally possible when the embedded V is an unaccusative. These examples improve with some added context:

(22) a.   Because it's in the tropics, the Amazon is an unlikely river to freeze.
      b. ?Because it's in the tropics, the Amazon is an unlikely-to-freeze river.

The judgements here are somewhat delicate, but if anything the A N CP order in (22a) seems better than the A CP N order in (22b). This is not at all the general pattern for Raising to Subject adjectives, where A CP N is marginally possible with unaccusatives, but A N CP is completely impossible. This is where retaining the Object Gap restriction rather than a No Subject Gap restriction would be helpful. Because the objects of unaccusatives always raise, there will always be an object gap in any CP with an unaccusative verb. If

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[5]Of course, none of the examples so far have had overt subjects, but in most, there is evidence of a PRO_ARB in subject position. What is meant by a subject gap, then, is not just any place where a subject is not pronounced, but rather a gap that has its meaning determined by the outside N.

the Object Gap restriction were the correct generalization, then this would make that CP eligible to move to the right of N.

But *unlikely* is exceptional in more ways than one. One of its even stranger properties is illustrated in (19). Here, the ungrammaticality of (19a) shows that CP-Licensing has been violated. That should immediately rule out the tough-nut construction in either order - A N CP or A CP N - for transitive verbs, but for some reason, it does not. We see in (19b) that the order A N CP is licensed, even though the CP itself is not. (19b) does satisfy the Object Gap restriction, though, because *pet* corefers with the object of *own*. Thus it appears that in some way the Object Gap restriction trumps CP-Licensing. It is as if the need for the CP to move to the right of N is great enough that it can ignore normal restrictions on its internal structure. There is a paradox here: the CP can only move past N when it has an object gap, but it can only have an object gap when it moves past N.

A solution dependent on only the CP-Licensing and Object/No Subject Gap restrictions seems bound to fail in this case: there must be some other factor in play. However, because this particular behavior is limited to *unlikely*[6], it is difficult to say what that factor might be. It is a question that warrants further study. In the meantime, it is probably unwise to make any generalizations from the case of *unlikely* to any of the other adjective classes. Specifically, although the Object Gap restriction would be helpful here in explaining the difference between the examples with unergative and unaccusative Vs, at present the revised restriction against having a subject gap seems more likely to be the correct generalization.

3.2 *Ready* and *Strange*

However, two other somewhat exceptional adjectives bring the No Subject Gap restriction into question as well. *Ready* and *strange* are mirror images of each other: both at least marginally license the tough-nut contruction with almost any embedded V, but *ready* allows only the A CP N order and *strange* allows only A N CP:

(23)   Transitive

    a.   This pet is ready to own.
    b.   *a ready pet to own
    c.   a ready-to-own pet

(24)   Unergative

    a.   This dog is ready to howl.
    b.   *a ready dog to howl
    c.   ?a ready-to-howl dog

(25)   Unaccusative

    a.   This tree is ready to fall.
    b.   *a ready tree to fall

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[6]Even *likely* seems to act like the more regular Raising to Subject adjectives, according to a brief and informal survey, though there was some slight difference of opinion on this point.

c. ?a ready-to-fall tree

(23b) presents a problem because *own* appears to have an object gap associated with the N
pet and no subject gap, and yet the A N CP order is impossible.

(26)   Transitive
    a.   This pet is strange to own.
    b.   a strange pet to own
    c. *a strange-to-own pet

(27)   Unergative
    a. *This dog is strange to howl.
    b. ?a strange dog to howl
    c. *a strange-to-howl dog

(28)   Unaccusative
    a. *This tree is strange to fall.
    b.   a strange tree to fall
    c. *a strange-to-fall tree

Here, in (27b) and (28b), we see that A N CP order is acceptable even though the CPs
contain subject gaps and no object gaps. Also, CP-Licensing is violated in (27) and (28),
since the (a) examples with the predicate version of *strange* are ungrammatical, but the (b)
examples, where the CP has moved to the right of N, are fine.

Thus *ready* and *strange* give us reason to question both the CP-Licensing and No Subject
Gap restrictions.

4   Implementation

The existence of so many exceptions indicates that the original two restrictions I proposed
are not sufficient. But the fact that they work for a few cases suggests that there is order to
be found here. One attractive thing about the original restrictions is that a non-stipulative
explanation for them seems possible.

That is: CP is generated as a complement of A, so A CP N is the basic order, and any
movements that are going to occur within the CP happen before it moves to produce the A
N CP order. This movement of the CP is to a rightward adjoined position higher in the DP,
and so the movement will reverse any c-command relation between the CP and whatever
previously selected it. Thus for any trace or Pro element within the CP to be bound after
the movement to adjunct, its binder must be contained within the CP. If such a trace or
Pro is in an object position, then it is more likely that it is bound by something higher
in the same clause, whereas if it is in a subject position, it is more likely that whatever
originally bound it was outside its clause and thus did not move with it when the CP raised
to adjunct. Therefore, it is the failure of binding once the CP has moved that accounts for
the ungrammaticality of subject gaps in the A N CP version of the tough-nut construction.

5   Conclusion

This story, of course, is still quite speculative at this point, and many details remain to be worked out, but it holds promise. It suggests that a full account of the data under discussion will at least include something very like the two restrictions I originally proposed. The CP will have to be licensed in its A CP N position (with some kind of exception for *unlikely* and *strange*). There will also be a requirement very similar in spirit to the Object Gap and No Subject Gap restrictions, but saying more directly that the gap that corefers with the N must be bound within its clause. The questions that still remain to be answered are what exactly is doing the binding, and what exactly is getting bound. But since every class of adjectives imposes different requirements on the structure of its complement CP, I am hopeful that once these questions are answered, the behavior of any adjective with respect to the tough-nut construction will become predictable.