Obligatory Object Gaps in Infinitival Clauses

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1   Introduction

- There are two types of infinitival clauses:

    - Those that obligatorily contain a gap (which cannot be filled by a coreferential pronoun)

        (1)   a.   Ken tends (*for him) to eat cookies.   [Raising to Subject]

              b.   I expect Ken (*for him) to eat the cookies.   [ECM / Raising to Object]

              c.   Ken hoped (*for him) to get a lot of cookies.   [Subject Control]

              d.   I asked Ken (*for him) to stop eating my cookies.   [Object Control]

              e.   Ken is too tired (*for him) to make cookies.   [Subject-Gap '*too*']

              f.   These cookies are too sweet to enjoy (*them).   [Object-Gap '*too*']

              g.   The cookies are easy for us to make (*them).   [Tough Constructions]

    - Those that <u>can</u> contain a gap, but this gap can be filled by a (*for*-)DP

        (2)   a.   Ken did so in order (for me) to get cookies.   [purpose clauses]

              b.   (For him) to eat cookies would be a bad idea.   [for-to infinitive]

              c.   The kitchen is too warm for me to make the cookies.   [Gapless '*too*']

              d.   It is easier for you for me to make the cookies.   [Gapless '*tough*']

- Within the class of obligatory gaps in (1), the vast majority occur in subject position

    - This is captured by the following constraint:

        (3)   **Condition on Gaps**
              In all infinitival clauses with an obligatory (non-WH) gap, the gap ought to occur in subject position

    - There are good reasons for a condition like (3)

        - If there has to be a gap, it should be in subject position: any lower down and potential intervention effects could arise

        - Specifically, the (non-WH) empty category (*e.c.*) below in (4) cannot be referentially dependent on the matrix subject X below, because the embedded subject Y intervenes

        (4) $[_{TP}$ X ... $[_{TP}$ Y ... $[_{VP}$ *e.c.*$_{Y/*X}$ $]$ $]$ $]$

            - Minimality dictates that the *e.c.* should be referentially valued by the closest c-commanding possible antecedent

◆ However, two of the phenomena in (1) involve gaps in <u>object</u> position:

  ▪ Tough Constructions (TCs, (1g))

  ▪ Object-Gap '*too*' clauses (OGTs, (1f))

◆ These phenomena apparently stand in exception to the condition in (3), and thus they will be the topic of today's discussion.

  ▸ We begin with two simple questions:

PRIMARY QUESTIONS

What about TCs and OGTs forces the gap to appear in *object* position?

How do such object gaps get resolved (when the subject is a DP) without violating minimality?

◆ In addition, through the course of this talk, we will show that:

  ▸ *for*-DPs in TCs and OGTs like (1f) and (1g) are <u>not</u> embedded subjects (contra e.g. Hartman 2011)

    ▪ However, *for*-DPs <u>*are*</u> subjects in the sentence types in (2)

  ▸ In fact, overt (pronounced) embedded subjects are blocked in TCs and OGTs, which explains why they are free of intervention effects in normal circumstances

  ▸ This leads to two more complex questions:

SECONDARY QUESTIONS

How do we relate the syntax of TCs/OGTs to blocking of subjects?

If subjects are blocked, how does $T_{[-FIN]}$'s features get satisfied?

◆ The analysis we provide is:

PROPOSAL

TC/OGT predicates select for an infinitival clauses bearing <u>middle voice</u>

  ▸ Thus the object gap empty category (*e.c.*) in the embedded clause gets 'promoted' to the embedded subject:

  (5) $[_{TP}$ SUBJ$_i$ ... tough/too $[_{TP}$ *e.c.*$_i$ to $[_{VoiceP}$ MIDDLE $[_{VP}$ V *e.c.*$_i$]]]]

  ▸ The embedded object *e.c.* moves to the embedded subject position, blocking the merger of an embedded subjects, satisfying T's EPP feature, avoiding minimality issues, etc.[1]

    ▪ This means **(3) holds in every case, even for TCs and OGTs**[2]

    ▪ It also correctly predicates that TCs and OGTs are not possible with non-middle (e.g. passive) infinitival complements, as we will see.

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[1] Crucially, we do not discuss how the dependency is formed between the embedded subject/object and the matrix subject. See section 4.1.

[2] (3) doesn't need to hold for infinitival relative clauses, because relative clause gaps are WH gaps. See Appendix.

2   '*tough*'s, '*too*'s, and Gaps

◆ In this section, we discuss some general properties of 'tough' clauses and 'too' clauses

▸ We will also look at where gaps (*e.c.*s) are required in a variety of these clauses

▸ We will find that TCs and OGTs parallel each other

2.1   '*Tough*' Clauses

2.1.1   General Properties

◆ '*tough*' predicates are adjectives or nouns that can introduce infinitival complements

▸ Ex.: *tough, easy, difficult, hard, fun, annoying, a hassle, ...* (Lasnik and Fiengo 1974:568)

◆ TCs are characterized by an object gap in a '*tough*' predicate's complement clause – as in (6a)

▸ There is also a related sentence that does not require any gap, which we call a "Gapless '*tough*'" clause, as in (6b)

(6)   a. Ken_i is fun (for me) to annoy $e.c._i$.   [TC]

b.   It is fun (for me) to annoy Ken.   [Gapless '*tough*']

■ Gapless '*tough*' is easily identifiable by (i) the expletive *it* subject for the TC predicate, and (ii) the lack of an object gap

◆ TCs have been the subject of much attention from very early in generative grammar

▸ (Chomsky 1964:61-65, Ross 1967:§6.1.3.3, Postal and Ross 1971, Chomsky 1973, Lasnik and Fiengo 1974, a.o.)

2.1.2   *For*-DPs and Subjects

◆ A *for*-DP following a '*tough*' predicate is in principle ambiguous (e.g. Chomsky 1973), as in (7)

▸ The first kind of *for*-DP is merged outside of the embedded clause, as the experiencer argument of the '*tough*' predicate – (

▸ The second is the subject of the embedded clause

(7)   It is fun for me to annoy Ken.   [Gapless '*tough*']

a.   = *me* is the experiencer of *fun*, within a matrix PP (*for* = P)

b.   = *me* is the agent of *annoy*, in subject position of the *for-to* infinitive (*for* = C)

▸ To disambiguate, you can add a second *for*-DP[3]

(8)   It is fun for me [$_{CP}$ for Jenna to annoy Ken].   [Gapless '*tough*']

a.   = *me* is the experiencer of *fun*

b.   ≠ *me* is the agent of *annoy*

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[3]See Hartman 2011 for other methods of disambiguating *for*-DPs.

▸ Notably, only one *for*-DP is possible in a TC – the one that gets interpreted as the experiencer of the tough predicate

(9)   a.   Ken is fun for me to annoy.   [TC]

b.   *Ken is fun for me for Jenna to annoy.   [TC]

◆ Additionally expletive *there* is impossible in TCs (Bresnan 1971, Chomsky 1973) – (10b)

▸ But notice that it is possible for expletive subjects to occur in Gapless '*tough*' cases – (10a) is a naturally-occurring example from the Internet[4]

(10)   a.   If the editorial process was too strict, it would be particularly <u>easy for there</u> to develop a consensus around lowering the standards.   [Gapless '*tough*']

b.   *If the editorial process was too strict, a consensus around lowering the standards would be particularly easy for there to develop.   [TC]

▸ Since expletive *there* as in (10) can only be a subject...

■ It's clear that *for*-DPs are in principle possible as subjects in complement clauses of '*tough*' predicates, like (10a)

■ If TCs disallow *for*-DP subjects, it follows that (10b) is ungrammatical:

◆ Thus, in TCs, ***for*-DPs are <u>not</u> subjects**

2.2   '*Too*' Clauses

2.2.1   General Properties

◆ The Degree heads *too* and *enough* can introduce an infinitival complement as well (Ross 1967:§6.1.3.2, Postal 1974:§6.8, Lasnik and Fiengo 1974, a.o.)

▸ The adjective they modify does not need to take an infinitival complement normally

◆ OGTs are characterized by an object gap in this complement clause – as in (11a)

▸ There are also similar, related structrues:

■ Subject-Gap '*too*', SGT, in which the complement clause only has a subject gap – (11b)

■ Gapless '*too*', in which the complement clause has no gap – (11c)

(11)   a.   This painting$_i$ is too blue (for Tom) to put *e.c.*$_i$ on display.   [OGT]

b.   This painting$_i$ is too blue *e.c.*$_i$ to match the walls.   [SGT]

c.   This painting is too blue for Tom to put it on display.   [Gapless '*too*']

■ SGT can be identified by the interpretation of the matrix subject as the subject of the embedded clause

■ Gapless '*too*' can be identified by its need for an overt (pronounced) embedded subject[5] and the absence of a gap (obviously)

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[4]Example from http://en.wikipedia.org/wiki/Wikipedia:Wikipedia_is_failing.

[5]This is unlike most infinitival clauses, which can have a generic PRO$_{arb}$ subject.

2.2.2 *For*-DPs and Subjects

◆ Like '*tough*' predicates can license experiencer arguments, '*too*' can license a evaluator argument

▸ The evaluator is distinct from the subject of the embedded clause

▸ The evaluator and the embedded subject both surface as *for*-DPs in similar positions, again providing ambiguity

   (12)   This painting is too blue for Tom to put it on display.   [Gapless '*too*']

        a.   = *Tom* is the evaluator of *too blue*, within a matrix PP (*for* = P)

        b.   = *Tom* is the agent of *put*, in subject position of the *for-to* infinitive (*for* = C)

▸ As before, adding a second *for*-DP disambiguates

   (13)   The painting is too blue for Tom [$_{CP}$ for his butler to put it on display].   [Gapless '*too*']

        a.   = *Tom* is the evaluator of *too blue*

        b.   ≠ *Tom* is the agent of *put*

■ The first *for*-DP is outside the embedded clause, merged as the evaluator argument of the '*too*' predicate

■ The second is the subject of the embedded clause

▸ And notably, OGT disallows the subject *for*-DP

   (14)   a.   This painting is too blue for Tom to put on display.   [OGT]

        b. $^{\star?}$This painting is too blue for Tom for his butler to put on display.   [OGT]

◆ Further paralleling the '*tough*' data...

▸ Gapless '*too*' allows an expletive *there* as the lower clause subject but OGT does not:

   (15)   a.   The editorial process is too lax for there to develop a consensus around lowering standards.   [Gapless '*too*']

        b. *A consensus around lowering standards is too far-fetched for there to develop.[OGT]

▸ Since expletive *there* can only be a subject...

■ It's clear that *for*-DPs are in principle possible as subjects in complement clauses of '*too*' predicates, like (15a)

■ It follows that (15b) is ungrammatical: OGTs disallow overt embedded subjects

◆ Thus, in OGTs, **_for_-DPs are <u>not</u> subjects**

2.3   Summarizing TCs and OGTs

◆ Both TCs and OGTs **require an object gap**

  ‣ The gap cannot be associated with an external argument or adjunct position instead (Stowell 1986)

◆ Also, **merging a distinct subject is impossible in TC and OGT infinitivals**

  ‣ Reviewing what we've already seen:

  (16) **Gapless, allows merging distinct subject**

    a.   It is fun for me **for Jenna** to annoy Ken.   [Gapless '*tough*']

    b.   If the editorial process was too strict, it would be particularly easy **for there** to develop a consensus around lowering the standards.   [Gapless '*tough*']

    c.   This painting is too blue for Tom **for his butler** to hang it up.   [Gapless '*too*']

    d.   The editorial process is too lax **for there** to develop a consensus around lowering standards.   [Gapless '*too*']

  (17) **Object gap, disallows merging distinct subject**

    a. *Ken$_i$ is fun for me **for Jenna** to annoy $e.c._i$.   [TC]

    b. *If the editorial process was too strict, a consensus around lowering the standards$_i$ would be particularly easy **for there** to develop $e.c._i$.   [TC]

    c. *This painting$_i$ is too blue for Tom **for his butler** to hang $e.c._i$ up.   [OGT]

    d. *A consensus around lowering standards$_i$ is too far-fetched **for there** to develop $e.c._i$. [OGT]

  ‣ This leads to an important question: **Why should *for*-DP subjects be blocked in TCs and OGTs?**

    ▪ We will argue this is because **TCs and OGTs require a subject gap, as well**

INTERIM SUMMARY
TCs and OGTs obviously involve an object gap
Less obviously, there is also a necessary subject gap

3 Analysis

- ◆ Past literature has primarily focused on the mechanism that ensures identity between the embedded object gap and the matrix subject
    - ‣ Chomsky (1981) proposes that a WH operator moves to embedded clause's left periphery, binding the trace in the object gap and being bound by the matrix subject
    - ‣ Some argue that the e.c. in TCs is related via movement through the embedded clause's CP (e.g. Hornstein 2001, Hicks 2009)
    - ‣ Rezac (2006) and Fleisher (2013) argue that it's a kind of copy raising
- ◆ We take no strong stance on this issue[6]
- ◆ Instead, **we focus on some large problems that are often overlooked**, and not often addressed in the above citations
    - ‣ Namely the questions we raised in the introduction:

> **A GOOD THEORY OF TCS AND OGTS WILL EXPLAIN:**
>
> (18) a. Why must the gap be in object position?
>   b. How do we overcome apparent minimality problems?
>   c. How do we relate object gaps to blocking of subjects?
>   d. And if subjects are blocked, how does T's EPP get satisfied?

3.1 The TC and OGT Derivation

- ◆ There is a simple solution to all of these puzzles in (18)
    - ‣ The '*tough*'/'*too*' predicate in TCs and OGTs **selects an infinitival complement clause in the middle voice**[7]
- ◆ To understand how the middle voice helps us, let us first sketch its propeties
    - ‣ Following Sailor and Ahn 2010 and Ahn and Sailor *to appear*, a MIDDLE head merges in VoiceP
        - ▪ VoiceP is below Infl projections and above vP (see also Harley 2012)
        - ▪ MIDDLE blocks an external argument from merging in the syntax
    - ‣ Since there is no external argument in the syntax, the object is what gets attracted to TP by T's

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[6]There is strong evidence for A′ movement (e.g. TCs license parasitic gaps), but TC also looks like raising in that gapless '*tough*' clauses, the subject is an expletive (typically a property of raising). On the other hand, in gapless '*too*' clauses, the subject is thematically selected (typically a property of control).

[7]Assuming that selection can only restrict the features of its complement, it must be that Voice[0] features are visible on the infinitival C. There is evidence that Cs can bear such Voice features:

i.   Non-active sentence from Sora (Anderson 2007:44)

    tid -dəm -te   -n
    beat-REFL -NPAST-NONACT
    V   Voice T   C
    'He beats himself'

Note that the C morpheme is glossed as non-active. This indicates that C bears that non-active features of the Voice. In the same way, MIDDLE Voice features must be visible on the infinitival clause's C. An empirical question remains: to what extent are predicates (besides TC/OGT predicates) observed to select the voice of their complement clauses?

EPP[8]

- ‣ Thus, a clause in the middle voice will have a derivation like the following

  (19)   [$_{TP}$ The apples$_i$ must have [$_{VoiceP}$ sold *e.c.*$_i$ quickly]]

    - Note the lack of agent for *sell*

- ‣ (For more details see Sailor and Ahn 2010, Ahn and Sailor *to appear*)

◆ Now let us show how TCs and OGTs are derived

- ‣ Consider the TC/OGT derivations in (20)

  (20)   a.   Jenna$_i$ is difficult [$_{TP}$ *e.c.*$_i$ to [$_{VoiceP}$ MIDDLE describe *e.c.*$_i$]].   [TC]

         b.   Jenna$_i$ is too complicated [$_{TP}$ *e.c.*$_i$ to [$_{VoiceP}$ MIDDLE describe *e.c.*$_i$]].   [OGT]

    - The *e.c.* that is referentially dependent on the matrix subject is base-generated as the object

      ◇ In this position, the *e.c.* gets its θ role from the embedded predicate

    - MIDDLE is merged as the head of VoiceP

      ◇ This fixes the clause's voice as middle

      ◇ **The presence of the middle voice effectively causes the embedded *e.c.* objects in (20) to move to the embedded subject position**

        ▷ Because they are the closest candidate for movement when no external argument gets merged in the syntax

◆ Let us be clear about how **TC/OGT selecting a complement in the middle voice helps answer all our questions in (18)**

- ‣ Middle voice always effects a gap in the object position: (18a) ✓

  - It does so by blocking the external-merging of an external argument in the syntax: (18c) ✓

  - Because there is no syntactic external argument, the object is attracted to TP by its EPP

    ◇ Thus the object *e.c.* moves and checks T's EPP: (18d) ✓

  - Expletive subjects are also blocked, but not because no external argument merges

    ◇ They are blocked because they are a last-resort phenomenon

    ◇ And the subject position is filled by the object *e.c.*. already: (18c) ✓

- ‣ There is no embedded subject that intervenes between the *e.c.* and the matrix subject

  - As such the *e.c.* that is now in embedded subject position can enter its dependency with the matrix subject

    ◇ Without an intervener like the one described in (4): (18b) ✓

    ◇ We leave open the question of how the *e.c.* and matrix subject enter into a filler-gap dependency.

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[8]Adjuncts do not get attracted to T. One possibility is the Activity Condition (Chomsky 2000). Another is minimality: in MIDDLE clauses, the object is closer to T than adjuncts (for a derivation that predicts this, see Ahn and Sailor To appear).

3.2   Some Voice Properties Derived

◆ We are calling the non-active, non-passive voice that causes the object to move to subject, "middle voice"

  ▸ This is meant to evoke other middle-type clauses (see Ahn and Sailor *to appear*)

    (21)   a.   The apples$_i$ must have sold *e.c.$_i$* quickly.   [canonical middle]

         b.   Jack$_i$ will make *e.c.$_i$* a good father.   [*make* construction]

         c.   This bed$_i$ sleeps *e.c.$_i$* three people.   [accommodation middle]

◆ This explains why **there are many commonalities between TCs/OGTs and the familiar middle voice** (Ackema and Schoorlemmer 2006)

  ▸ The semantic subject cannot be expressed as an oblique

    ■ i.e. nothing like a *by*-phrase is possible

    ■ No PP that contributes an external argument is possible in the embedded clause

      (22)   a.   Jenna is painful for me [$_{CP}$ (*for/by/from/to/on/of others) to describe].

            b.   Jenna is painful for me [$_{CP}$ to describe (*for/by/from/to/on/of others)].

  ▸ There is an 'inversion' process whereby the object ends up occupying the subject position

  ▸ The *for*-DP is not really a subject, but an argument of adjectival/adverbial predicate[9]

    ■ Removing *easily* below strongly degrades the *for*-DP in a canonical middle, implicating that the *for*-DP is licensed by the adverb

      (23)   a.   Don't buy bamboo floor. It scratches easily (for people with dogs).

            b.   Don't buy bamboo floor. It scratches (#for people with dogs).

    ■ (For more on *for*-DPs in middles, see Bhatt and Pancheva 2006 and references therein)

  ▸ (There are differences from familiar middles as well; see section 4.1)

◆ A consequence of this theory is that **the voice of the embedded clause ought to be fixed as middle**

  ▸ Because TC/OGT predicates select a complement clause in the middle voice, it should be impossible for the clause to occur in any other voice (e.g. passive)

  ▸ **This prediction is borne out**

    (24)   a.   It is painful for me [$_{CP}$ for others to [$_{VoiceP}$ ACT discuss Jenna]].   [Gapless '*tough*' active]

            b.   It is painful for me [$_{CP}$ for Jenna to be [$_{VoiceP}$ PASS discussed *e.c.$_i$*]]. [Gapless '*tough*' passive]

            c.   Jenna $_i$ is painful for me [$_{CP}$ *e.c.$_i$* to [$_{VoiceP}$ MIDDLE discuss *e.c.$_i$*]].   [TC]

            d.   ⋆Jenna$_i$ is painful for me [$_{CP}$ *e.c.$_i$* to be [$_{VoiceP}$ PASS discussed *e.c.$_i$*]].   [TC passive]

    ■ Gapless '*tough*' can have a complement that is passive or active, as (24a-b), because when there is no object gap, the voice is not fixed

    ■ TCs on the other hand are fixed as MIDDLE, and passive is disallowed, as in (24c-d)[10]

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[9] However, non-subject *for*-DPs – both in TCs/OGTs and canonical middle – often facilitate an interpretation in which they are co-referent with the external argument of the lower clause, at the conceptual-intentional level.

[10] Upon first glance, OGTs seem to differ from TCs in this respect. The sentences *Jenna is too complex to discuss e.c.*, and *Jenna is too complex e.c. to be discussed e.c.* are both grammatical. However, while the former employs an OGT derivation, the latter could employ a SGT derivation (which does not have a fixed-voice requirement). By hypothesis, the latter is impossible with OGT syntax, but at this point we do not know how to show this empirically.

▸ This is despite the fact that a passive voice derivation would seem to converge for all the same reasons a middle voice analysis does

  ▪ A passive derivation like (24d) would conform to (18), in the same way as (24c)

▸ It is nonetheless impossible – **because of selection**

  ▪ TC predicates select MIDDLE complements, and not PASS ones

  ▪ (Similar to how *⋆I want that he (should) go*, with a tensed CP complement, has no reason to not converge besides the fact that *want* selects non-finite CP complements)

4   Conclusions

◆ **Selection drives why object gaps only occur with TCs/OGTs**

  ▸ Predicates can issue selectional restrictions on the grammatical voice of complement clauses

  ▸ In the case of TCs/OGTs, the embedding predicates select for MIDDLE voice clauses[11]

  ▸ And the MIDDLE voice is at the core of solving our original questions

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MIDDLE AT THE CORE OF TCs/OGTs

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(25) a. The MIDDLE Voice derivation ensures that the gap is in object position, because all middles require object gaps

b. It avoids problems of minimality from an embedded subject, because the object *e.c.* moves to become that embedded subject

c. Other subjects are blocked because MIDDLE prevents external arguments from merging, and because the subject position is fillable without any need for a 'last resort' expletive

d. The embedded subject position does get filled, so its EPP features get checked

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  ▸ Additionally, this derivation describes why there can be no passive in the infinitival TC/OGT clause

    ▪ The voice of the infinitival clause is fixed as MIDDLE

◆ Let us return now to (3), which was our jumping-off point

  (3)   **Condition on Gaps**
         In all infinitival clauses with an obligatory (non-WH) gap, the gap ought to occur in subject position

  ▸ As we saw, (3) is essentially a minimality restriction

  ▸ Though TCs/OGTs at first glance appear to violate (3), they in fact conform to it

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[11]A′ theories can be cast in terms of selection as well. TCs/OGTs select a C that bears certain voice features, and that atttracts the relevant operator/copy in its specifier (cf. Stowell 1986, Brody 1993, which are presented in terms of government instead of selection).

4.1   Open Question

◆ We still leave to further research the question of **how exactly the** *e.c.* **and the matrix subject establish their dependency**

    ▸ Possible analyses could extend various prior work on TCs/OGTs, which argue for a variety of derivations, including:

        ■ object deletion/control (e.g. Lasnik and Fiengo 1974, Akmajian 1972)

        ■ operator movement (e.g. Chomsky 1981, Stowell 1986)

        ■ movement of the object itself (e.g. Hornstein 2001, Hicks 2009)

        ■ copy-raising (e.g. Rezac 2006, Fleisher 2013)

    ▸ It ought to be noted that, of these, only the "movement of the object itself" derivations allow the θ Criterion to be preserved (assuming that the TC/OGT predicate doesn't introduce a θ role)

        ■ (at least the clause maintaining that all arguments receive some θ role)

◆ Additionally, while we explored the similarities between TCs/OGTs and other middles earlier, **there are also some important differences between familiar middles and the TC/OGT middle**

    ▸ TC/OGT MIDDLE can apply to practically any transitive verb, whereas other MIDDLEs are not entirely productive (Ackema and Schoorlemmer 2006)

        ■ This includes TCs/OGTs licensing stranding of Ps, whereas canonical middles do not

        (26) a.   Greek$_i$ is easy [$_{CP}$ *e.c.$_i$* to MIDDLE translate *e.c.$_i$*].   [TC]

                b.   Greek$_i$ MIDDLE translates *e.c.* easily.   [canonincal middle]

                c.   Greek$_i$ is easy [$_{CP}$ *e.c.$_i$* to MIDDLE translate from *e.c.$_i$*].   [TC]

                d. *Greek$_i$ MIDDLE translates from *e.c.* easily.   [canonincal middle]

    ▸ TC/OGT MIDDLE only occurs in infinitival subordinate clauses

        ■ Other middles distribute independent of the finiteness of the clause

        ■ If TC/OGT MIDDLEs could occur in matrix clauses, we should expect (26d) to be possible, by employing that MIDDLE Voice.

    ▸ Also, if they were the same, we would expect that one of these other middles could occur as the infinitival complement

        ■ If the TC/OGT predicates select a MIDDLE complement

        (27) a.   This bed sleeps *e.c.$_i$* two people.   [accommodation middle]

                b.   It is easy for me for this bed to sleep *e.c.$_i$* two people.   [Gapless '*tough*']

                c. *This bed is easy for me to *e.c.$_i$* sleep *e.c.$_i$* two people.   [TC]

        ■ Since (27c) is bad, it must be that **the middle voice required for accommodation middles is distinct from the middle voice required by TCs and OGTs**.

           ◇ Just like passive was blocked because it was distinct from the middle voice required by TCs and OGTs

- ▸ We already know that there are many "flavors" of passive
  - ▪ (get passive, verbal passive, adjectival passive, ...) what gets
- ▸ We also know that there are many flavors of active
  - ▪ (unergative, transitive, ditransitive, ...)
- ▸ So it is perhaps not not surprising that there should be many flavors of middle
  - ▪ canonical, accommodation class, and now TC/OGT
- ▸ So the questions that this raises are: **What are the formal differences between these flavors of MIDDLE, and how do they derive the productivity/distribution of each?**

◆ Lastly, it is worth investigating what happens when you have '*too*' followed by a '*tough*'-predicate, like (28)

- ▸ (28a) is the kind of example we are thinking of

  (28) a.   These cookies are too difficult for me to cook (*them).

  b.   These cookies are difficult for me to cook (*them).   TC

  c.   These cookies are too Christmas-y for me to enjoy (them).   OGT

- ▸ Note that it has the properties of a TC
  - ▪ There is no possibility to fill the object gap
    - ◇ Like the TC in (28b), unlike the OGT in (28c).[12]
  - ▪ So we conclude that the infinitival clause in (28a) is a complement of the '*tough*' predicate, *difficult*
- ▸ But why should *too difficult* behave as a TC and not as an OGT?
  - ▪ In other words, why couldn't the infinitival clause be a complement of '*too*'?
    - ◇ (In such a derivation, the '*tough*'-predicate, *difficult*, wouldn't have a clausal complement.)
  - ▪ Maybe if object-gap '*too*' combined with a gapless '*tough*' clause, there would be conflicting demands that couldn't both be met
    - ◇ For example, maybe gapless '*tough*'-clauses require an infinitival clause/expletive *it* subject to be the subject of the '*tough*' predicate, and that wouldn't allow a referentially dependent *e.c.* in the lower clause in the appropriate way

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[12]Note: OGT allows the object gap to be filled, just in case there is a *for*-DP. This is a curious property we have not yet investigated.

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Appendix: Other non-finite clauses

- There are other kinds of non-finite clauses which have obligatory gaps that exhibit different properties from the TCs and OGTs investigated here.
    - For each other kind of non-finite clause, we will consider:
        - is an object-gap obligatory/possible/impossible?
        - is a subject-gap obligatory/possible/impossible?
        - can the non-finite clause be in the passive?
    - Recall that TCs and OGTs require subject gaps, object gaps, and cannot be passivized
- Reduced relative clauses
    - subject-gap obligatory
        (29) a. The man$_i$ *e.c.*$_i$ eating cookies
              b. *The man$_i$ him$_i$ eating cookies
    - object-gap impossible
        (30) a. *The cookies$_i$ the man eating *e.c.*$_i$
              b. *The man$_i$ cookies eaten by *e.c.*$_i$
    - passive ok
        (31) a. The man eating cookies
              b. The cookies eaten (by the man)
- Non-infinitival control
    - subject-gap obligatory[13]
        (32) a. He$_i$ threatened his parents with *e.c.*$_i$ dropping out of college.
              b. *He$_i$ threatened his parents with him/himself$_i$ dropping out of college.
    - object-gap impossible
        (33) a. *He$_i$ threatened his parents with the college forcing *e.c.*$_i$ out.
              b. *The college$_i$ threatened his parents with him getting/?being forcing by *e.c.*$_i$.
    - passive ok
        (34) a. He threatened his parents with dropping out of college.
              b. He threatened his parents with getting/?being forced out of college.

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[13]There is a gapless version of this too – *he threatened his parents with the possibility of him dropping out of college.*

- ◆ <u>Infinitval relative clauses</u>
  - ‣ subject-gap impossible (in actives; but cf. passives below)
    - (35) a. * The man$_i$ $e.c._i$ to follow the directions
      - b. The directions$_i$ (for us) to follow $e.c._i$
  - ‣ object-gap obligatory
    - (36) a. The directions$_i$ for him to follow $e.c._i$
      - b. * The directions$_i$ for him to follow $them_i$
  - ‣ passive ok
    - (37) a. The directions to follow
      - b. The directions to be followed
- ◆ All three of these have properties that indicate **they involve a different derivation than the one for TCs/OGTs**
  - ‣ Only infinitival relative clauses are *to*-infinitivals
    - ▪ The other two seem to involve smaller structures (without a T)
    - ▪ Crucially without T, there is no T whose EPP requires a subject position needs to be filled
  - ‣ Only infinitival relative clauses can have a gap in object position
    - ▪ But passives are also allowed, meaning that our analysis of TCs/OGTs can't apply here
    - ▪ This is not a problem for us, since antecedent-gap relations are not sensitive to minimality in relative clauses
    - ▪ However, there is still an open question of why the subject gap in (35a) is disallowed, while the subject gap in (37b) is allowed