

Purpose Infinitives in English: The problem of argument visibility in Baxter (1999) (and a re-examination of the data)

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Goal Infinitives: What Baxter says they do

Baxter claims that GIs are adjuncts modifying either a VP or an N'. Relevant N' examples involve nouns that denote events, and they behave much like their verbal counterparts.

- (2) a. Jack's trip to the market (**in order**) (**for his friend**) **to sell the cow**
b. Sandy's purchase of beans_i (**for her Mom**) **to plant** _{-i} **in the garden**
c. The university's hiring of Sandy_i _{-i} **to teach English**

Note that in all but the *hire* cases, the subject of a phrasal GI is most easily identified with the subject of the clause, or specifier of the NP, in which it occurs.

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Goal Infinitives: What Baxter says they look like

Baxter (1999) considers each of the following an example of a Goal Infinitive (GI):

- (1) a. Jack went to the market (**in order**) (**for his friend**) **to sell the cow**.
b. Jack brought beans_i home (**for his Mom**) **to plant** _{-i} **in the garden**.
c. The university hired Sandy_i _{-i} **to teach syntax**.

This (putative) class includes infinitival phrases or *for*-clauses, sometimes preceded by *in order*.

Baxter subclassifies GIs as either Rationale Infinitives (1a), or Purpose Infinitives (1b-1c).

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Putative syntactic evidence for adjuncthood of GIs

1. Optionality: GIs may always be omitted without loss of grammaticality.
2. *Do so* replacement:

(3) Dana [spiked the ball] **to impress Sandy**, and Chris [did so] **to impress Pat**.
3. Iterability:

(4) Jack went to the market **to sell the cow to please his mother**.

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Purpose Infinitives vs. Rationale Infinitives

The primary criterion for differentiating Rationale Infinitives (RIs) from Purpose Infinitives (PIs) is that RIs may be preceded by *in order*, while PIs may not.

- (5) a. Jack went to the market **in order to sell the cow.**
 b. Jack's trip to the market **in order to sell the cow.**
 c. * Jack brought beans_i home **in order (for his Mom) to plant** _{-i} **in the garden.**
 d. * Sandy's purchase of beans_i **in order (for her Mom) to plant** _{-i} **in the garden.**
 e. * The university hired Sandy_i **in order** _{-i} **to teach syntax.**
 f. * The university's hiring of Sandy_i **in order** _{-i} **to teach English.**

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Purpose Infinitives: Problem and Solution

Baxter claims that the gap in a PI is always co-referential with "some" argument of the modified verb or noun.

Assuming that Baxter has the facts right, there is a visibility problem: when a PI has a gap identified with an argument realized within the VP or N' it modifies (i.e. a complement), it has no access to information about that complement, given normal assumptions about the value of the MOD feature (*synsem*), and information available in *synsem* objects.

Baxter's solution is to include ARG_S as a *head* feature, thereby giving the PI access to all arguments at the VP or N' level.

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Purpose Infinitives have gaps

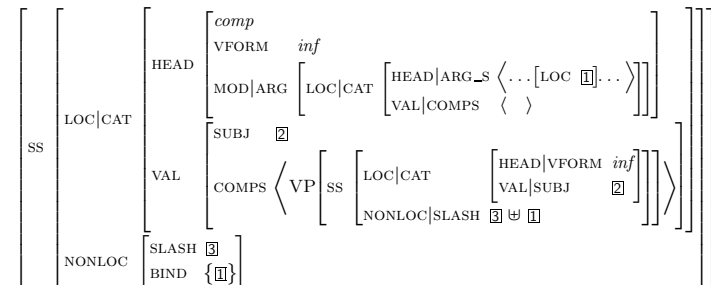
Since some PIs have internal gaps (6a), Baxter assumes that all PIs do (6b), in contrast to the ungapped VP analysis for RIs (6c).

- (6) a. Jack brought beans_i home **(*in order) to plant** _{-i} **in the garden.**
 b. The university hired Sandy_i **(*in order)** _{-i} **to teach syntax.**
 c. Jack went to the market **(in order) to sell the cow.**

Also, this gap/no-gap contrast may reflect Baxter's feeling that in cases like (6b) a referent corresponding to the subject of the infinitive is syntactically determined, while in cases like (6c), the determination is pragmatic. (As noted, though, the subject of a phrasal RI is normally associated with the subject of the clause or NP.)

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Lexical entry for PI-to



Assuming PIs are in fact adjuncts, this account incorrectly predicts that the gap in a PI can be identified with anything on the ARG_S list of the modified thing.

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Evidence against the solution

Nowhere in the data Baxter presents is a PI gap identified with a subject or dative object, and trying to construct such an example results in ungrammaticality.

- (7) a. Jack carried a cell phone_i **for his mother to call him on** _{-i}.
b. * Jack_i carried a cell phone **for his mother to call** _{-i} **on it**.
c. Jack handed a sweater_i to his mother **to take** _{-i} **on the plane**.
d. * Jack handed his mother_i a sweater **to make** _{-i} **comfortable on the plane**.

A save of this analysis might rely on case-mismatch, but this would mean extending a theory of case in English beyond the nominative-accusative distinction, to account for the ill-formedness of (7d).

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Class 1: Ungapped infinitival adjuncts

These are ungapped infinitival phrases or *for*-clauses, which may be preceded by *in order*, associated with (some projection) of verbs or event-denoting nouns.

- (8) Jack went to the market **(in order) (for his friend) to sell the cow**.

Evidence for adjuncthood:

Do-so test:

- (9) Dana [spiked the ball] **to impress Sandy**, and Chris [did so] **to impress Pat**.

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Evidence against (this) problem: re-examining the data

Baxter offers little argumentation that GIs constitute a uniform class, syntactically speaking. Optionality alone is not an argument for adjuncthood. Other evidence that GIs are adjuncts only involve RIs – ungapped infinitive phrases or clauses that may be preceded by *in order*.

I argue that Baxter conflates three classes of infinitive constructions:

1. Ungapped infinitival adjuncts
2. Object control constructions
3. Gapped infinitives that do *not* have the same distribution as the first two classes

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Relatively unrestricted distribution:

- (10) a. Jack slapped Sandy **(in order) to insult him**.
b. a visit to the market **(in order) to sell the cow**

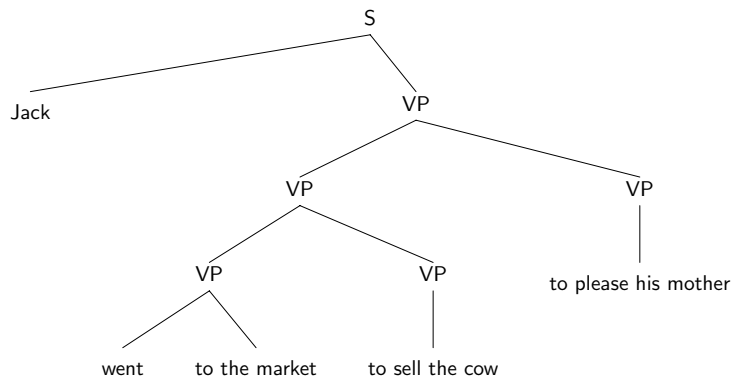
Other adjuncts can intervene:

- (11) Jack went to the market (in the morning) (wearing new jeans and a stylish cap) **to sell the cow**.

Can be iterated (though structural ambiguity is possible):

- (12) Jack went to the market **to sell the cow to please his mother**.

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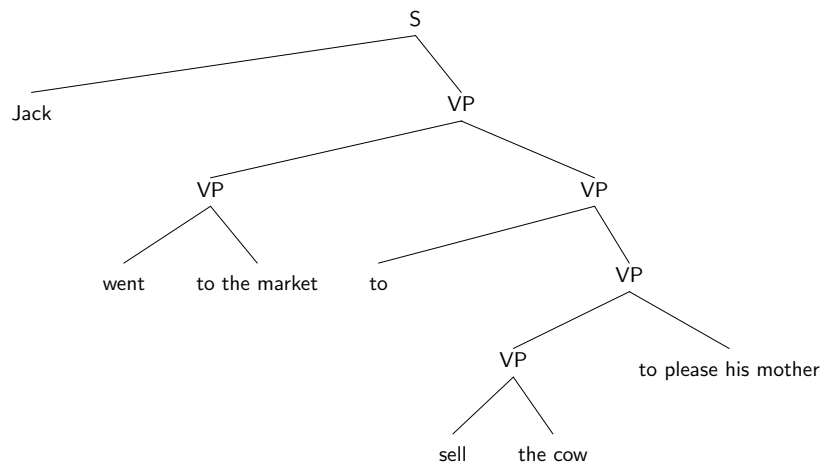
Class 2: Object control constructions

Baxter includes examples involving *hire* with the Purpose Infinitives, because the infinitive cannot be preceded by *in order*. This forces him to suppose that the infinitival VPs following *hire* are (subject) gapped clauses.

(13) The university hired Sandy_i (***in order**) _{-i} to teach English classes.

Instead, I would argue that *hire* is an object control verb.

$$\left[\text{SS|LOC|CAT} \left[\text{HEAD} \begin{array}{c} \text{verb} \\ \text{VAL|COMPS} \langle \text{NP}_i, \text{VP} \left[\text{LOC|CAT} \left[\text{HEAD|VFORM} \text{ inf} \right] \right] \rangle \right] \right] \right]$$



The VP[inf] whose (unexpressed) subject is identified with the direct object of *hire* describes the hiree's job description, and not the hirer's purpose in hiring him/her. Infinitive *for*-clauses and phrases preceded by *in order* do describe purpose of hiring.

- (14) a. The university hired Sandy (to teach English) **in order for him to spy on the other instructors.**
- b. The university hired Sandy (to teach English) **in order to spy on him.**

These examples are consistent with an infinitival adjuncts analysis – given the relatively unrestricted distribution of such modifiers, we would expect them to be able to modify *hire*. Crucially, the unexpressed subject of *spy* in (14b) is not identified with the complement of *hire* as it is in (13), or there would be a visibility problem.

Class 3: Gapped infinitives

These are gapped infinitive phrases or *for*-clauses that cannot be preceded by *in order*; the gap is mandatorily associated with a particular NP in the clause or NP containing the infinitive.

- (15) a. Jack brought beans_i home **(*in order) (for Sandy) to plant** _{-i}
in the garden.
 b. Jack's purchase of a cotton sweater_i **(*in order) (for his mother)**
to wear _{-i} **on cool summer nights**

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Equivocal evidence

Can these gapped infinitives be iterated? Possibly, but it is hard to know what structure to assign the examples in (18).

- (18) a. Jack brought beans_i home **to give** _{-i} **to his mother to plant** _{-i}
in the garden.
 b. Sandy brought a really expensive dress_i **to wear** _{-i} **to dinner to**
impress everyone with _{-i}.

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Evidence that gapped infinitives are not VP modifiers

Evidence from the *do so* (16a) and adjunct intervention (16b) tests:

- (16) a. * Sandy [bought tomato seeds_i] **to plant** _{-i} **in the back yard**, and
 Dana [did so] **to grow** _{-i} **in pots.**
 b. * Jack brought some beans_i to Phil's house (wearing new jeans and
 a stylish cap) **to plant** _{-i} **in his garden.**

Further, a more restricted distribution than their ungapped brethren:

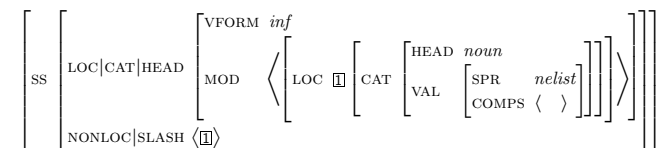
- (17) a. * Jack slapped Sandy_i **to insult** _{-i}.
 b. * Jack visited the market_i **to burn** _{-i} **down.**
 c. * a visit to the market_i **to burn** _{-i} **down**

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Two hypotheses: Extraposed nominal modifiers, or complements

Hypothesis 1: Gapped purpose infinitives are post-nominal modifiers that can be extraposed.

This takes care of the visibility problem, because the infinitive can now see the thing its gap is associated with, since it is modifying it.



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Evidence for extraposition

Clearly, gapped infinitives can modify an N' (19a), but whether all instances can be reduced to extraposition is arguable.

- (19) a. Jack brought [some beans_i **to plant** _{-i} **in the garden**] home.
 b. Jack brought some beans_i home **to plant** _{-i} **in the garden**.
 c. [Some beans_i **to plant** _{-i} **in the garden**] were brought home by Jack.
 d. Some beans_i were brought home (by Jack) **to plant** _{-i} **in the garden**.

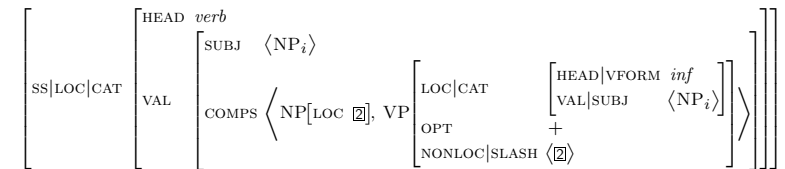
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Gapped infinitives as complements

Hypothesis 2: Gapped purpose infinitives are the optional complements of a select class of transitive verbs and nouns.

This fixes the visibility problem, since both the gapped infinitive and the thing associated with the gap occur on the same COMPS list.

An example of such a lexical entry might look something like this:



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(Possible) evidence against extraposition

Extraposition cannot explain the well-formedness of (20a), if it is in fact well-formed, since the non-extraposed version (20b) is ungrammatical.

- (20) a. Sandy called Kim_i to her office **to fire** _{-i} **for insubordination**.
 b. *Sandy called [Kim_i **to fire** _{-i} **for insubordination**] to her office.
 c. Kim_i was called to her office (by Sandy) **to fire** _{-i} **for insubordination**.

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*References

Baxter, D. P. (1999). *English Goal Infinitives*. Ph. D. thesis, University of Illinois, Urbana-Champaign.

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