

States, events and VP structure: evidence from purposive adjuncts

1. Purpose clauses and Rationale clauses: A puzzle. A tradition of work going back to Faraci (1974) has consistently identified a constellation of differences between VP-internal and vP-adjoined infinitival adjunct clauses, respectively called (by convention) *purpose* clauses (PC) and *rationale* clauses (RC) illustrated in (1)a,b. The optional inclusion of [in order] can be used to disambiguate them; for most speakers it is only compatible with RCs. But the chief characteristic that unfailingly distinguishes them is the presence of a gap controlled by the matrix direct object in a PC, and the absence of such a gap in a RC (1)-(3). The only allowable gap in a rationale clause is PRO controlled by the matrix subject. That the presence/absence of a gap correlates with low vs. high attachment is supported by the differing control properties seen in these examples, and has been corroborated by a variety of arguments [see (15)-(18)].

Why should the presence vs. absence of a gap correlate with low vs. high attachment?

2. A second puzzle. Another vexing problem concerning PCs and RCs is to characterize the subtle difference in meaning that is often possible to detect but is notoriously difficult to pin down. The relevant distinction shows up in pairs like (4)-(7), as a difference in entailments about the intentions of the agent. The PCs (in the (a) examples) seem to express an intention or purpose in some abstract sense, without necessarily implying anything about the agent's intentions. RCs, on the other hand (the (b) examples), explicitly provide the intentions of the agent — in some cases coercing an otherwise absent agentive interpretation.

What is the nature of this difference, and why does it correlate with the presence/absence of a gap?

3. A joint solution. In this talk I'll argue (following Huettner 1989) that the two kinds of purposive adjuncts are essentially the same, and that the curious distribution of gaps, as well as the subtle difference in their meanings, is the outcome of restricted compositional possibilities determined solely by attachment site (8). Specifically, I argue for a solution involving the following ingredients:

- VPs whose meanings entail result states decompose syntactically into two layers below little v: (i) a (possibly null) adjectival “target state predicate” like (9) whose semantic type is $\langle e, st \rangle$ (taking s as the type for states/events/worlds), and (ii) a causative verbal head like (10) that selects it (semantic type $\langle \langle e, st \rangle, \langle e, st \rangle \rangle$), existentially binding its event/state variable (11).
- The basic meaning common to PCs and RCs is a modal statement expressing aims held in the evaluation world/situation, with semantic type $\langle s, t \rangle$ (13).
- A PC is just a basic purposive adjunct that has a gap left by null operator movement (19), deriving a predicate of type $\langle e, st \rangle$.

I'll try to show that any predicate of events/states, as modified by a purposive adjunct, denotes a predicate of events/states “whose purpose” is expressed by the adjunct. Thus, the attachment site of a purposive adjunct clause will have both a syntactic and a semantic consequence. If it's attached low — modifying the target state predicate — it will (A) express the “purpose” of the target state, but not necessarily of the event that causes it, and (B) necessarily have a gap controlled by the direct object. (Null operator movement will be forced so as to yield a semantic type that matches the one posited for the target state predicate). On the other hand, the reverse will hold if the purposive adjunct is attached high — modifying the vP or the VP (but crucially not v', if it's correct that XP-adjunction isn't permitted to non-maximal projections). Specifically, a high adjunct will (A) express the purpose of the causing event, not of the target state; and (B) not be able to have null operator movement (again because both the VP and the vP are saturated with respect to the thematic arguments; they're both of type $\langle s, t \rangle$).

4. Statives. While this approach to the differences between PCs and RCs explains the pattern of entailments (about agentive intentions) in (4) and (7), it does not explain why the pattern holds in (5)-(6). These sentences involve plain stative predicates. Why can't the gapless adjuncts (the (b) examples) express goals relevant to the states described by constituents like [*the patient here*]? I'll suggest that an answer is available if Rothstein (20) is right that there is no such constituent. She reports evidence that stative predicates combine directly with eventive *be*, hence are not saturated in their maximal projection. Interestingly, examples that do involve stative small clauses (14a) also allow *gapless PCs*—expressing desires not held by an agent of a causing event.

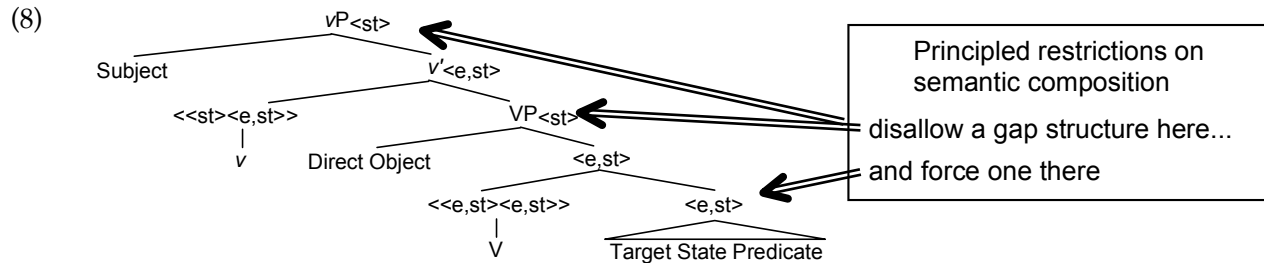
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The presence of a gap controlled by the direct object correlates with VP-internal attachment:

- (1) a. They brought Max here [(*)in order) for us to talk to _] **purpose clause (PC)**
 b. They brought Max here [(in order) for us to talk to him] **rationale clause (RC)**
- (2) a. They₁ brought Max₂ here [PRO₁ to talk to _₂]/[_₂ to talk about himself] **PCs:** Contain a gap associated with the (thematic) object in main clause
 b. A dog_i was found t₁ here [for us to take care of (#it)]
 c. Something_i arrived t₁ here [for us to deal with (#it)]
- (3) *They₁ brought Max₂ here [in order PRO₁ to talk to _₂] **RCs:** NO non-PRO gap

A subtle difference in meaning:

- (4) a. Someone left these leaves here [for me to rake _] *nothing entailed about subject's intentions*
 b. Someone left these leaves here [for me to rake them] *RC expresses the subject's intention*
- (5) a. The patient is here [for the doctor to see _] *nothing entailed about patient's intentions*
 b. The patient is here [for the doctor to see him] *RC entails that the patient intends to be seen*
- (6) a. The form is here [for you to sign _] *PC expresses (merely) that I should sign the form*
 b. #The form is here [for you to sign it] *RC implies that my signing is the reason for its presence*
- (7) a. Max put his gun on the table [for me to shoot him with _] *just to prove I wouldn't do it*
The PC seems to express an 'abstract' purpose for the gun being on the table, not Max's intention.
 b. #Max put his gun on the table [for me to shoot him with it] *just to prove I wouldn't do it*
The RC expresses Max's intention in putting the gun on the table — contradicting the second adjunct.



- (9) || here || = $\lambda x \lambda e [\text{state}(e) \ \& \ \text{here}(x)(e)]$
- (10) || bring || = $\lambda P_{\langle e, st \rangle} \lambda x \lambda e [\text{event}(e) \ \& \ \text{bringing}(e) \ \& \ \exists s [\text{cause}(s)(e) \ \& \ P(x)(s)]]$
- (11) || bring here || = $\lambda x \lambda e [\text{event}(e) \ \& \ \text{bringing}(e) \ \& \ \exists s [\text{cause}(s)(e) \ \& \ \text{state}(s) \ \& \ \text{here}(x)(s)]]$
- (12) || v || = $\lambda p \lambda x. [e \text{ is a goal-directed event} \ \& \ x \text{ is the agent of } e \ \& \ \exists e' [\text{cause}(e')(e) \ \& \ p(e')]]$
- (13) || for John to talk to Mary || =
 $\lambda e [\forall w: w \text{ accessible from } e \ \& \ \text{compatible with the goal relevant to } e \rightarrow J \text{ talks to } M \text{ in } w]$
- (14) a. My shampoo keeps flies around [for me to kill (them)] *Can describe a goal relevant to the state*
 b. My shampoo brings flies around [for me to kill (#them)] *Goal relates just to the causing event*
 cf. My shampoo keeps flies buzzing around [for me to kill (#them)] *No stative small clause—like b.*

References.

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