

## A Additional investigation of facilitators

In this section we look at several different types of adjuncts and the domains in which they adjoin. This paper's proposal predicts that adjuncts in the  $\nu$ P and TP domains should be able to license s-middles, while higher adjuncts cannot. Here we show that these predictions are born out, though we see some unexpected sensitivity to linear order in addition to structural placement of these adjuncts.

As noted previously, manner adverbs are the most common type of facilitator. Taking for granted that these are VP level adverbs, they are correctly predicted by the analysis to license s-middles (provided they are semantically compatible with a syntactically inactive external argument).

It is unclear from the literature how to test for a distinction between  $\nu$ P level adverbs and VP level adverbs. In principle  $\nu$ P level adverbs should count for Anti-locality though I know of no way to show this.

For verbs like *cut* and *steal* that are sensitive to high facilitators, TP level adverbs should count as high facilitators. This appears to be true, though some adjuncts additionally show sensitivity to whether they linearly intervene between the subject and verb. Rightward projection of these particular adjuncts appear unable to license the s-middles.

- (1) a. That bread probably cuts/??that bread cuts probably
- b. The bread usually cuts/??that bread cuts usually
- c. This bread once cut/that bread cut once (but now it is frozen).
- d. This bread now cuts/this bread cuts now (because it thawed).
- e. \*/?? The bread cut yesterday.
- f. \*/?? The bread cuts every day.

Whether a TP level adverb appears next to the subject or far to the right appears to have consequences for scope. In the following examples, a rightward projected adverb has two scope possibilities, while a phrase medial adverb can only take low scope (according to speakers who have clear judgments about these, they are hard to get).

- (2) a. 2 Argentinians usually win the marathon. (2>usually, ??usually>2)
- b. 2 Argentinians win the marathon usually. (2>usually, usually>2)

Adjuncts with this sensitivity to linear order in s-middles might therefore be projected higher than TP when they show up on the right, which would explain why they do not count as a high facilitator in that position.

CP level adverbs are predicted to be too high to license s-middles, and indeed they do not license s-middles.

- (3) a. \*/?? (Unfortunately) these peanuts (unfortunately) shell.  
 b. \*/?? (Maybe) these peanuts (maybe) shell.  
 c. \*/?? The peanuts shelled because they were ripe.  
 d. \*/?? Those peanuts shell for all intents and purposes.

### A.1 Overt PP's

I have discussed evidence for the existence of covert PP-like structures that can embed DP objects in certain types of predicates. If this is true, one of the predictions of this theory is that it should be possible to form *pseudo-middles*, with objects of *overt* prepositions fronting to form a s-middle. Examples like these are rare, presumably because preposition stranding is generally marked in A-movement constructions. However, the examples we can find conform to the predictions of this analysis given language-specific constraints on preposition stranding.

Dutch is one of the few languages that allows pseudo-middles. However, since Dutch is not normally a preposition stranding language, the preposition must go unpronounced when the object fronts<sup>1</sup>.

- (4) *Dutch* (Ackema & Schoorlemmer 2006: 145-146)
- a. Het zit lekker in deze stoel.  
 it sits comfortably in this chair  
 'It is comfortable to sit in this chair.'
- b. Deze stoel zit lekker.  
 this chair sits comfortably  
 'This chair is comfortable to sit in.'

Pseudo-middles have not previously been reported for English as far as I know, but native English speakers that I have consulted have revealed them to be possible

<sup>1</sup> A reviewer makes the interesting observation that impersonal middles like in (4a) likewise have facilitation effects, despite the lack of overt movement. In other words, removal of the adverb in (4a) results in ungrammaticality, just as in (4b). This could be teaching us either of two things: 1) that impersonal middles *are* derived by movement, but the expletive originated lower than we previously thought, or 2) that there are independent properties of impersonal middles, unrelated to normal s-middle formation, that cause a need for facilitators (Lekakou & Pitteroff 2018 discuss some differences). On the latter approach, we might consider impersonal middles to be closer to tough-constructions in having a similar meaning to middles but not the same form. Support for the latter proposal is that the intransitive predicates that can form impersonal middles are not the same as those that form regular s-middles (Broekhuis et al. 2015: 497). Similarly, tough constructions are not subject to the same predicate restrictions as regular s-middles, allowing even stative verbs (e.g. *it is easy to know the answer to silly questions*). This is potentially a fruitful topic for future research.

for certain predicates. We will additionally see here that a locality restriction between the verb and the preposition in pseudo-passives appears to be active in s-middles as well, which limits the ability of the PP to facilitate object movement to Spec  $\nu$ P. The result is that pseudo-middles behave like verbs that take bare DP objects (e.g. *steal*), requiring facilitation at both high and low positions.

Not all predicates can form a pseudo-middle, but those that can appear to require both a high and a low facilitator to be marginally acceptable.

- (5) a. ??/\* This board writes on easily.  
 b. \* This board doesn't write on.  
 c. (?) This board doesn't write on easily.

Some speakers don't particularly like pseudo-middles (though many of them later report that they begin to accept certain ones after some time), but still get the contrast reported above and between the examples in (6) and (7) showing different predicates.

- (6) a. \* Gromit doesn't lie to easily.  
 b. \* WW2 doesn't talk about easily.
- (7) a. (?)  $\nu$ P's don't extract from easily.  
 b. (?) That shower doesn't walk into easily.

These examples show that the PP cannot itself constitute a low or a high facilitator, contrary to the behavior predicted for such an XP (and observed for quirky case). A clue as to why regards the word order between the preposition and the adverb in the more acceptable examples. If the preposition were in situ, it would surface to the right of the adverb. However, we observe it to the left of the adverb, adjacent to the verb. Consistent with the previous discussion on head movement from V to  $\nu$ , it appears that the preposition moves across the adverb as well.

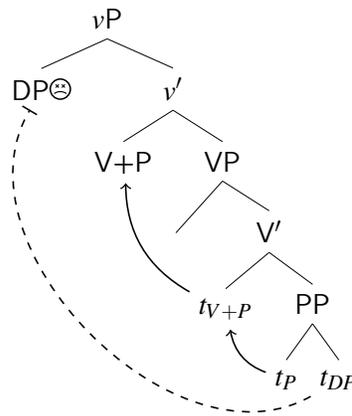
- (8) a. \*  $\nu$ P's don't extract easily from.  
 b. \* This board doesn't write easily on.

This fact is reminiscent of English pseudo-passives, which also show a similar locality restriction between the verb and preposition (as seen in (9b)) that are not as apparent in regular transitive clauses (van Riemsdijk 1978; Chomsky 1981; Hornstein & Weinberg 1981; Baker et al. 1989; Baltin & Postal 1996; Bruening 2011; Drummond & Kush 2015, and much other work).

- (9) a. I (recently) talked (recently) to Gromit (recently).

- b. Gromit was (recently) talked (\*recently) to (recently).  
 c. Who did Gromit (recently) talk (recently) to (recently)?

It appears that in both pseudo-middles and pseudo-passives, the preposition must move to the verb<sup>2</sup>. Head movement of P to V eliminates the PP's ability to facilitate movement on my analysis, thus predicting that a low facilitator is needed to license object movement to Spec  $\nu$ P.



**Figure 1:** If the preposition moves to V, which moves to  $\nu$ , a low facilitator is required to license object movement to Spec  $\nu$ P..

A high facilitator is then also required to license movement of the bare DP from Spec  $\nu$ P to Spec TP.

To summarize, pseudo-middles in English appear to be available if we have both high and low facilitation, but only for certain types of predicates. These predicate restrictions are currently unexplained, but they pattern with facts about pseudo-passives; the set of PP's that allows pseudo-passivization is smaller than the set that allows *wh*-extraction (van Riemsdijk 1978).

<sup>2</sup> It is unclear why pseudo-passives and pseudo-middles have this requirement that the preposition move to the verb. One possibility is to adopt Abels (2003), where PP's are phases. On his account, movement out of PP must go through Spec PP, which violates Anti-locality. Dutch gets around this problem by deleting the preposition (which removes the linearization violation, assuming Fox & Pesetsky 2005). Perhaps English avoids this problem by incorporating P onto V, which somehow removes the phasal properties of PP.

- (10) a. Which statue did Wallace pose beside?  
 b. Who did you vote for?  
 c. Who did Gromit run from?  
 d. \* The statue was posed beside.  
 e. ?? John Adams was voted for.<sup>3</sup>  
 f. \* The police were run from.

More work is needed to understand why certain PP's resist extraction of their complements in A-movement while others do not, and why there is variation across different A-movement constructions. I leave this as a topic for future research.

## B Modality

In section 4.2, s-middles with modals were shown to be dependent on an ability reading, but I claimed that this modality is not a necessary component of s-middles more generally (contra Fagan 1992). This claim was motivated by the fact that we could construct a s-middle with no detectable ability reading (or other modality). Additionally we can see that modality is not inherent to s-middles by comparing s-middles to their passive counterparts. If s-middles had inherent modality, we would expect to see meaning differences between them and passives in every case. We take a closer look now at the example presented in 4.2.

*Context:* Two sheets were washed together. One became wrapped up inside the other so it came out less clean.

- |   |   |
|---|---|
| (11) Middle   | (12) Passive  |
| a. Sheet #1 washed better than sheet #2.<br><i>one sheet became cleaner than the other.</i> | a. Sheet #1 was washed better than sheet #2.<br><i>one sheet became cleaner than the other.</i> |

The sheet-washing s-middle has no detectable modality, and it shares the same meaning as the modality-less passive. These examples express nothing about the inherent properties of the sheets involved, but rather assert a sheet-washing event in which one sheet became cleaner for random reasons.

Nonetheless, many s-middles (not just those with modals) seem to have modality inherent to their meanings and we might wonder where this modality comes from in these other cases. I argue that we can attribute most of the various types of modality to the types of facilitators that license these s-middles. In particular,

<sup>3</sup> Many speakers seem to need a (relatively heavy) *by*-phrase for this pseudo-passive to be acceptable.

s-middles with the canonical manner adverbs seem to carry their modality through the adverbs themselves. Their passive counterparts appear to share these modal readings due to the presence of the adverb.

## (13) Middles

- a. This bread cuts easily.  
*This bread has properties that make it easy to cut.*
- b. This piano plays like a harpsichord.  
*This piano has properties that make playing it akin to playing a harpsichord.*

## (14) Passives

- a. This bread is easily cut.  
*This bread has properties that make it easy to cut.*
- b. This piano is played like a harpsichord.  
*This piano has properties that make playing it akin to playing a harpsichord.*

These adverbs trigger ability interpretations in both the passive and s-middle examples, showing that they have this modality independent of construction. This supports a view of s-middles as not having inherent modality.

An interesting puzzle is negation. Negation triggers modality in s-middles but not passives.

## (15) Middles

- a. This bread doesn't cut.  
*All attempts to cut this bread fail.*
- b. The bread didn't cut.  
*An attempt was made to cut the bread and it failed.*

## (16) Passives

- a. This bread isn't cut.  
*Cutting events of this bread do not occur.*
- b. The bread wasn't cut.  
*There was no bread cutting event.*

The fact that negation carries modality in s-middles but not in passives is puzzling if s-middles lack inherent modality. What is interesting about s-middles with negation is that the modality here isn't an ability reading of the type seen thus far. Negation here actually causes us to infer an implicit subject's attempt to cause the relevant event. In the bread-cutting examples, the negation causes us to understand that a bread-cutting attempt either failed or would fail. The passive examples do not have this reading.

This implicit attempt present in negative s-middles can lead us to infer properties of the object, thus appearing to be an ability reading. For example, *this bread doesn't cut* might lead us to expect that the bread has certain properties which make it uncuttable. However, the ability reading is not a necessary component

of these s-middles as we can source the failure to other external factors in these s-middles as well.

- (17) Wallace is such a nincompoop with that knife that the bread didn't even cut.

In this example we are led to believe that a subject with regular knife-wielding capabilities would have been able to cut the bread, but Wallace's ineptitude caused the bread cutting attempt to fail in this case. The ability inference about properties of the bread is entirely absent from this example, suggesting that the implicit attempt reading is distinct from the ability reading.

If we accept that the inference about implicit attempts under negation is distinct from the ability readings commonly attributed to middles, we might posit that the implicit attempt component of the meaning is an inherent component of s-middles, but the ability reading is not. In positive clauses, the attempt is asserted, thus rendering it obsolete as an extra inference.

This approach could provide some insight into how the external argument is logically represented in s-middles. The semantics of external arguments in s-middles might be different from passives in a way that only comes apart under negation, i.e. in s-middles the semantics of the implicit agent provides an attempt at the event, but not in passives. A possibility is that this attempt reading is a feature of impersonal constructions more generally.

To learn more, we might look carefully at languages that have both passives and impersonal constructions, and see 1) whether these constructions have the same semantics, and 2) whether they behave differently under negation.

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