

## The reversible core of object experiencer, location, and *govern*-type verbs\*

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### 1. Introduction: The Eventive/Stative Alternation

Consider the sentences in (1)–(3):

(1) *Object Experiencer (ObjExp) verbs* (e.g., *amuse, annoy, impress, ...*):

- a. John amused Bill (for hours). ≈  
“John did something (for hours) that amused Bill.” (Eventive)
- b. John’s appearance amused Bill. ≈  
“Bill’s amusement was at John’s appearance.” (Stative)

(2) *Location verbs* (e.g., *cover, surround, block, ...*):

- a. John covered the screen. ≈  
“John put something on the screen that covered it.” (Eventive)
- b. The blanket covered the screen. ≈  
“The blanket lay over the screen.” (Stative)

(3) *Govern-type verbs* (e.g., *protect, govern, control, ...*):

- a. John protected the gem with lasers. ≈  
“John installed lasers to protect the gem.” (Eventive)
- b. Lasers protected the gem. ≈  
“The gem was under the protection of lasers.” (Stative)

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Each of the (a) examples is a description of an event, while each of the (b) examples describes a state, a well-known alternation (see Belletti and Rizzi 1988, Landau 2010, and Pesetsky 1995 on experiencer verbs; Kratzer 2000 and Rothmayr 2009 on location verbs; and Fábregas and Marín 2017 for *govern*-type verbs).<sup>1</sup> This alternation causes problems for a strong linking theory like Baker's (1988) UTAH:

- (4) *The Uniformity of Theta Assignment Hypothesis (UTAH):*  
Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

Here, the same syntactic relation seems to hold between the subject and the verb in the (a) and (b) examples. But in eventive uses, as in the (a) examples, the subject is an agent; while in stative uses, like the (b) examples, it is not. We seem to have the same syntactic relation between the subject and the verb, but different thematic relations—a problem for UTAH.

Pesetsky (1995) notes that there are three ways to solve such problems. First, we could complicate our syntactic derivation, and propose that at the point in the derivation when UTAH holds, eventive and stative subjects are in different positions, and thus bear different thematic roles. Movement then masks this underlying difference. Second, we could complicate the semantics of thematic roles, and propose that the subject has the same thematic relation in both eventive and stative uses of these verbs. We would broaden our notion of agent to include things like *John's appearance*, *the blanket*, and *lasers* in the (b) sentences. Finally, we could abandon a strong linking theory. This should not be a starting point. We should seek the strongest linking theory unless facts truly require us to do otherwise.

I take the first approach. Subjects of eventive uses of these verbs do not start in the same place as the subjects of their stative uses. To establish this, I first explore the semantics of this alternation in more detail; the entailment relations that hold between eventive and stative uses support an analysis wherein eventive uses are built on top of stative uses. I then turn to the question of how to syntactically implement these facts in a way that maintains a strong linking theory, and show how my analysis receives independent support from some hitherto unnoticed facts about backwards binding. Finally, I show that despite superficial similarities, the eventive/stative alternation is not the instrument-subject alternation.

## 2. Semantic Nuances of the Eventive/Stative Alternation

I begin by poking into the meaning of the eventive/stative alternation a bit more. The relevant fact is that the meaning of eventive uses seem to contain the meaning of stative uses:

- (5) a. John amused Bill for hours.  $\implies$  (Eventive)  
b. Something amused Bill. (Stative)

This is related to another fact about these verbs: they can all appear in eventive uses with an (optional) *with*-phrase. The DP in this *with*-phrase seems to bear the same thematic relation

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<sup>1</sup>García-Pardo (2017, to appear) also discusses these verb classes, but not the eventive/stative alternation.

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to the verb as the subject of stative uses. In fact, an eventive sentence with a *with*-phrase entails a stative sentence with the *with*-phrase's DP as the subject.

- (6) *ObjExp*:
- a. John amused Bill with his antics.  $\implies$  (Eventive)
  - b. John's antics amused Bill. (Stative)
- (7) *Location*:
- a. John covered the screen with the blanket.  $\implies$  (Eventive)
  - b. The blanket covered the screen. (Stative)
- (8) *Govern-type*:
- a. John protected the jewel with an alarm system.  $\implies$  (Eventive)
  - b. An alarm system protected the jewel. (Stative)

Broadening our range of facts to include this *with*-phrase alternation causes problems not only for the strongest, UTAH-like linking theories, but also slightly weaker theories like the Universal Alignment Hypothesis (UAH) (Perlmutter and Postal 1984). Unlike the UTAH, these theories do not propose a one-to-one mapping between syntactic positions and thematic relations. Instead, they propose thematic relations are ordered on a hierarchy: arguments with higher thematic roles on the hierarchy are realized syntactically higher than arguments with lower thematic roles. Consider (8): in the eventive sentence, the *with*-phrase referent (*an alarm system*) appears in a lower position than the object (*the jewel*), while in the stative sentence, it appears in a higher position, becoming the subject. We can verify this by showing that the object can bind into the *with*-phrase DP, but not vice versa.

- (9) a. John protected every jewel<sub>i</sub> with its<sub>i</sub> alarm system.  
b. \*John protected its<sub>i</sub> jewel with every alarm system<sub>i</sub>.

(10) Every alarm system<sub>i</sub> protected its<sub>i</sub> jewel.

But *an alarm system* appears to bear the same thematic relation to the verb *protect* in both sentences in (8). This means that *an alarm system*'s thematic role would be ranked both below and above *the jewel*'s thematic role, undermining a strict hierarchy that would ensure consistency in arguments' relative positions, making our linking problem more acute.

We also see that omitting the optional *with*-phrase in the eventive use entails a stative use with an existentially bound subject.

- (11) *ObjExp*:
- a. John amused Bill for hours.  $\implies$  (Eventive)
  - b. Something amused Bill for hours. (Stative)

- (12) *Location*:
- a. John covered the screen.  $\implies$  (Eventive)
  - b. Something covered the screen. (Stative)
- (13) *Govern-type*:
- a. John quickly protected the jewel.  $\implies$  (Eventive)
  - b. It quickly became the case that something protected the jewel. (Stative)

(I've added some modifiers to disambiguate toward the appropriate reading.) This supports treating these *with*-phrases as arguments rather than adjuncts, since they are interpreted similarly to other dropped arguments (e.g., *John ate*  $\implies$  *John ate something*).

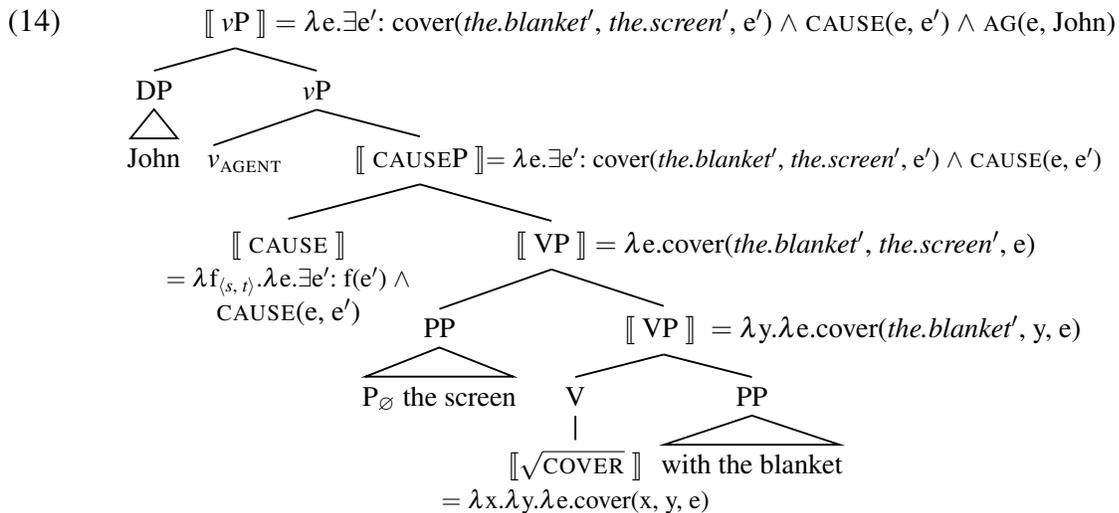
So there are two key entailment facts regarding ObjExp, location, and *govern*-type verbs established here. First, an eventive use of one of these verbs consistently entails a stative use of that same verb. Second, an eventive *with*-phrase corresponds to a stative subject. The next goal is to provide a structural implementation of these facts.

### 3. The Reversible Core of ObjExp, Location, and *Govern*-type Verbs

#### 3.1 Deriving Eventive Uses

The entailment facts surveyed above suggest that an eventive sentence with an ObjExp, location, or *govern*-type verb contains what goes into a stative sentence with the same verb, as an eventive use always entails a stative use. The difference in meaning between eventive and stative uses relates to **causation**: an eventive use describes an event of causing the state described by a stative use.

I will use *cover* as an example. Semantically, I assume  $[\sqrt{\text{COVER}}]$  denotes a stative spatial relation holding of two entities—here, *the blanket* and *the screen*—and an eventuality, and that *with* is semantically vacuous. (14) shows the proposed structure and truth conditions. (I will ignore the preposition  $P_\emptyset$  for now, and return to it shortly.)

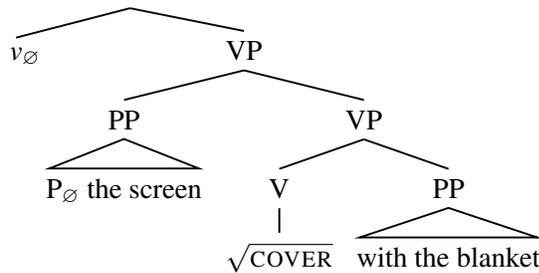


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The sentence describes events where John is the agent of an event that caused a covering state to hold between the blanket and the screen.

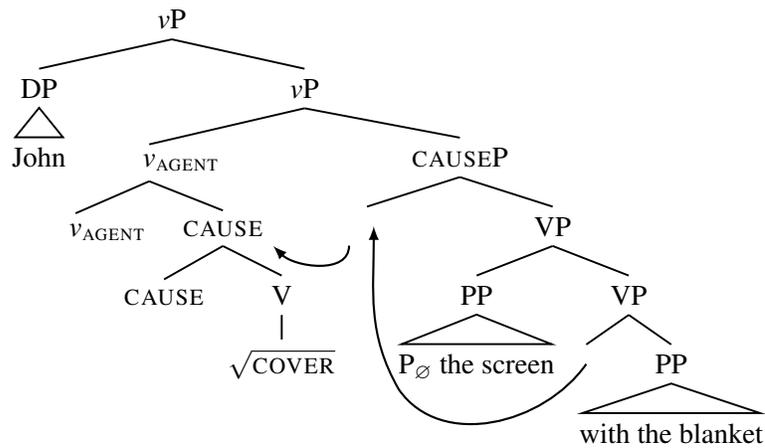
A stative use, lacking a causative meaning, replaces everything above VP with  $v_{\emptyset}$ , a semantically vacuous syntactic categorization head. This describes covering relations that hold between the blanket and the screen, rather than events causing such a relation to hold.

(15)  $[[vP]] = \lambda e.cover(the.blanket', the.screen', e)$



In an eventive sentence like (16a),  $\sqrt{COVER}$  raises to CAUSE, perhaps then to  $v_{AGENT}$ , where a spell out rule applies to the complex head [CAUSE  $\sqrt{COVER}$ ], yielding “cover”:

(16) a. John covered the screen with the blanket.  
 b.



### 3.2 (Abstract) Locations and $P_{\emptyset}$

Now, what is  $P_{\emptyset}$  doing here? I’ve included it in these structures following Landau (2010), who argues that crosslinguistically, experiencers have locative syntax—they are uniformly introduced in PPs. Landau also suggests that semantically, we can think of experiencers as abstract locations where mental states reside. I extend this claim to location and *govern*-type verbs as follows:

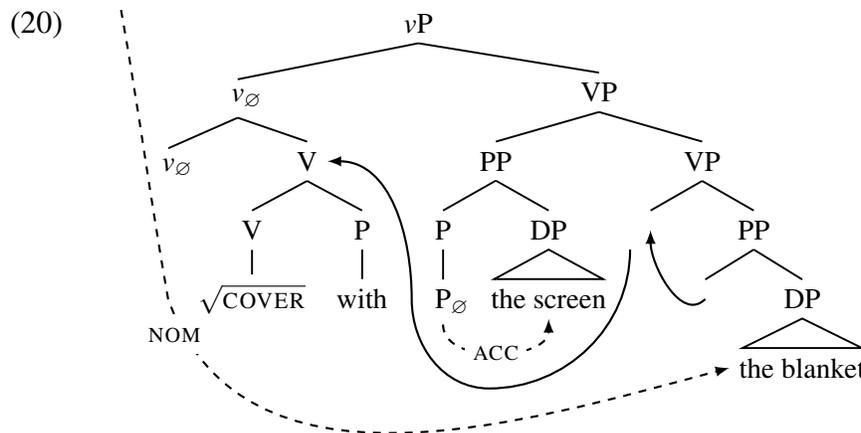
(17) *ObjExp: Object is abstract location*  
 John annoyed Bill.  $\approx$   
 “John caused annoyance to **be at** Bill.”

- (18) *Location: Object is non-abstract location*  
 John covered the screen with the blanket.  $\approx$   
 “John caused the blanket to **be upon** the screen, covering it.”
- (19) *Govern-type: Object is abstract location*  
 John protected the diamond with an alarm system.  $\approx$   
 “John caused the alarm system’s protection to **be over** the diamond.”

What  $P_{\emptyset}$  does in these sentences, then, is pick out the (abstract) location of the object DP.

### 3.3 Deriving Stative Uses

We now have an explanation for the underlying structure and derivation of eventive uses of ObjExp, location, and *govern*-type verbs. The final piece of the analysis is to derive stative uses of these verbs. In these cases, I propose that *with* incorporates into  $\sqrt{\text{COVER}}$  before raising to  $v$ , where a spell out rule applies to [ $\sqrt{\text{COVER}}$  with], yielding “cover.”  $P_{\emptyset}$  assigns accusative case to its object; *with* incorporating into V, though, leaves the lower DP without a case assigner. T probes down, agrees with *the blanket*, and assigns it nominative case; this DP then raises to Spec,TP, resulting in the surface word order where the lower DP has “reversed” over the object. It is for this reason that I refer to ObjExp, location, and *govern*-type verbs as “reversible verbs.” This derivation is shown in (20) for *cover*.



### 3.4 The Two Spell-Out Rules

We now have two spell out rules that produce the surface word “cover”:

- (21) a. [ CAUSE  $\sqrt{\text{COVER}}$  ]  $\rightarrow$  “cover” (Eventive)  
 b. [  $\sqrt{\text{COVER}}$  with ]  $\rightarrow$  “cover” (Stative)

This may seem redundant. But its utility becomes apparent when we consider verbs that look very much like reversible verbs in their syntactic and semantic properties, but which lack a stative use. One example is *load*:

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- (22) a. John loaded the truck (with books). (Eventive)  
b. \*The books loaded the truck. (Stative)

Intuitively, *load* in (22a) has a meaning similar to that of a verb like *cover*. The sentence can plausibly be read as saying something like “John caused the load of the books to be on the truck.” We also get a stative entailment that the load of books was on the truck. But unlike *cover*, *load* does not allow stative uses. We can now capture this contrast: *cover* has two spell out rules, while *load* has only one; “load” can be the spell out of [CAUSE  $\sqrt{\text{LOAD}}$ ], but there is no spell out rule for [ $\sqrt{\text{LOAD}}$  with], so stative uses cannot be derived.

#### 4. Support from Backwards Binding

ObjExp verbs exceptionally allow backwards binding (BB), where an anaphoric element in a surface subject is bound by the surface object, which is otherwise disallowed. However, BB is only possible with stative—and not eventive—uses of ObjExp verbs (Pesetsky 1987).

- (23) a. \*Each other<sub>*i*</sub>’s friends deliberately annoyed the party-goers<sub>*i*</sub> by blowing smoke in their faces. (Eventive ObjExp, \*BB)  
b. Each other<sub>*i*</sub>’s constituents annoy the politicians<sub>*i*</sub>. (Stative ObjExp, ✓BB)

The present analysis along with some independently motivated assumptions about binding can account for this. In (16b), we see that the eventive subject c-commands the object at all levels of the derivation, and the object never c-commands the subject at any level. This is like (23a), and BB is ruled out in these cases as expected. In contrast, (20) shows that initially, the object c-commands what becomes the surface stative subject. Binding conditions can be satisfied at this level of the derivation, allowing for binding from the object into the stative subject as in (23b)—assuming  $P_{\emptyset}$  can be ignored for binding purposes.

There is reason to believe that some prepositions can be ignored for binding purposes, provided they’re close enough to the verb (van Riemsdijk and Williams 1986).

- (24) a. Mary talked to Bill<sub>*i*</sub> about himself<sub>*i*</sub> on Tuesday.  
b. Who did you talk to *t<sub>i</sub>* about himself<sub>*i*</sub>?  
c. \*To whom<sub>*i*</sub> did you talk *t<sub>i</sub>* about himself<sub>*i*</sub>?

$P_{\emptyset}$  fulfills the adjacency requirement in structures like (20). Assuming we can treat it like *to*, it won’t prevent binding. It’s a stipulation to be sure, but not one without precedent.

Given that the current analysis treats location and *govern*-type verbs the same as ObjExp verbs, it predicts that they too should allow BB, and in only stative and not eventive uses. This prediction is borne out:

- (25) *Location*:  
a. \*A copy of itself<sub>*i*</sub> quickly covered every robot<sub>*i*</sub> with a sheet. (Eventive, \*BB)  
b. A picture of itself<sub>*i*</sub> covered every pail<sub>*i*</sub>. (Stative, ✓BB)

- (26) Govern-type:
- a. \*His advisors<sub>i</sub> protected every regent<sub>i</sub> with a bodyguard. (Eventive, \*BB)
  - b. Its<sub>i</sub> own thick skin protects every whale<sub>i</sub>. (Stative, ✓BB)

To my knowledge, the fact that BB occurs with location and *govern*-type verbs has not hitherto been noticed. Thus, the analysis developed in §3 makes a prediction about how BB should extend to verb classes other than ObjExp verbs which these new data support.

## 5. Two Faces of *With*

On the surface, there appears to be a similarity between the behavior of *with*-phrases in the eventive/stative alternation dealt with here and the instrument-subject alternation:

- (27) a. John covered the screen with the blanket.  
The blanket covered the screen. (Eventive/Stative)
- b. John opened the door with the key.  
The key opened the door. (Instrument-Subject)

If these alternations have the same source, it would be a problem for my analysis of reversible verbs, as I have analyzed these reversible *with*-phrases as arguments rather than adjuncts. Presumably, *with the key* in (27b) is a *vP* adjunct, yet its DP can still be a subject. Maybe the *with*-phrase needn't go inside the VP in the structure of reversible verbs. We could instead treat the eventive/stative alternation as a special case of instrument subjects.

However, reversible *with*-phrases are quite distinct from instrumental *with*-phrases. First, recall that eventive uses of reversible verbs lacking *with*-phrases entail stative sentences with an existentially bound subject. This is not so for instrument-subject verbs:

- (28) a. John covered the screen. (Ev)  $\implies$  Something covered the screen. (St)
- b. John opened the door.  $\not\Rightarrow$  Something (= some instrument) opened the door.

Second, instrumental *with*-phrases and reversible *with*-phrases have different meanings. Consider the contrast between an instrumental and a reversible *with*-phrase in (29):

- (29) a. John covered the hole with a shovel. (Instrumental, “means” *with*)
- b. John covered the hole with the blanket. (Reversible, “end” *with*)

We can call the typical instrumental *with* in (29a) the “means” *with*: it tells us the means by which the eventuality described was achieved. In contrast, the *with* of (29b) we can call the “end” *with*: it describes something that “ends up in” some spatial relation with the object. When these occur together, an end *with*-phrase must precede a means *with*-phrase:

- (30) a. John covered the hole [with the dirt]<sub>end</sub> [with the shovel]<sub>means</sub>.
- b. \*John covered the hole [with the shovel]<sub>means</sub> [with the dirt]<sub>end</sub>.

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The present analysis explains this, under the typical assumption that means *with*-phrases right-adjoin to  $vP_{AGENT}$ , as they thus must be outside of the end *with*-phrase inside VP.

Furthermore, two *with*-phrases of the same type sound degraded without coordination:

- (31) a. \*John covered the hole [with the shovel]<sub>means</sub> [with the forklift]<sub>means</sub>.  
b. \*John covered the hole [with the tarp]<sub>end</sub> [with the dirt]<sub>end</sub>.

However, the combination is grammatical in the order end before means, as shown in (30a). If both *with*-phrases were of the same kind, we wouldn't expect this restriction.

Finally, reversible verbs do not allow stative uses with means *with* subjects. (As shown in (6)–(8), they do allow stative uses with end *with* subjects.)

- (32) *ObjExp*:  
a. John annoyed Bill [with the feather duster]<sub>means</sub>.  
b. \*[The feather duster]<sub>means</sub> annoyed Bill.

- (33) *Location*:  
a. John covered the hole [with the shovel]<sub>means</sub>.  
b. \*[The shovel]<sub>means</sub> covered the hole.

- (34) *Govern-type*:  
a. John protected the diamond [with a quick shove]<sub>means</sub>.  
b. ?[A quick shove]<sub>means</sub> protected the diamond.<sup>2</sup>

*With*-phrases of the instrument-subject alternation and reversible verbs are distinct. Crucially, means *with*-phrases must occur outside end *with*-phrases. This shows end *with*-phrases are inside VP; instrumental *with*-phrases adjoin outside them, to  $vP_{AGENT}$ . Backwards binding shows end *with*-phrases originate below the object. These facts combined thus support the basics of §3's analysis.

## 6. Conclusion

The eventive/stative alternation of reversible verbs poses a problem for linking theories: it appears to disrupt the regular mapping between syntactic and thematic relationships. However, considering the peculiar properties of these verbs and their arguments leads us

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<sup>2</sup>This example is better than the others, but it gets an eventive reading, while end *with* subjects get stative readings. Putting these sentences into the simple present verifies this.

- (i) a. ??A quick shove protects the jewel.  
b. An alarm system protects the jewel.

I suggest that *govern*-type verbs may allow the instrument-subject alternation in addition to the eventive/stative alternation.

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to a more complicated syntax than is first apparent. Reversible verbs' eventive and stative subjects bear different thematic relationships to the verb, but they also start off in different syntactic positions. We can thus retain a strong linking theory.

Of course, I have only accounted for a small subset of these verbs' peculiar properties. Future research will show whether the line of reasoning pursued here could explain more of those properties, as discussed in Landau (2010), Pesetsky (1995), Rothmayr (2009), etc.

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