Location Verbs and the Instrument-Subject Alternation

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1. Introduction

There is a verb class in Spanish that denotes a spatial relationship between two entities (eg. *rodear* 'surround', *cubrir* 'cover', *obstruir* 'to obstruct'...), which I call 'location verbs' following García-Pardo (to appear). These verbs alternate aspectually between an eventive, change-of-location reading (eg. (1a)) and a stative locative reading (eg. (1b)).

(1)   a. Los soldados rodearon   la ciudad (en cuestión de minutos).
                the soldiers surrounded the city   (in matter   of minutes)
                'The soldiers surrounded the city (in a matter of minutes).'

        b. Las murallas rodean   la ciudad.
                the walls   surround the city
                'The walls surround the city.'

The received view, not only for Spanish but also for these verbs' counterparts in other languages (eg. Arad (2002) for Engish or Rothmayr (2009) for German), is that the eventive version takes agentive subjects (i.e. an animate, volitional, intentional entity like *the soldiers* in (1a)), whereas the stative version takes non-agentive (or 'causer') subjects (i.e. a non-volitional, non-intentional, generally inanimate entity like *the walls* in (1b)).

However, I have argued elsewhere (García-Pardo to appear) that this view is incorrect: these verbs may take agentive and non-agentive subjects in both aspectual versions. I concluded back then that external arguments are underspecified with respect to the role of 'agent' or 'causer': they only have the broad event role of 'initiator' of the eventuality (thus siding with authors like Borer 2005 or Ramchand 2008).

The present paper re-examines the aforementioned claims and argues that, while the agent and causer distinction is not relevant for these verbs, there are nonetheless thematic differences between the subjects of eventive and stative versions: the eventive subjects are indirect causers whereas the stative subjects are direct causers, and such distinction is aspectually and structurally determined. I will take the argument-structure alternation known as the instrument-subject alternation in Spanish as a case study.

This paper is structured as follows: Section 2 presents an overview of the analysis of location verbs in García Pardo (to appear). Section 3 discusses previous accounts of the instrument-subject alternation. Section 4 presents my proposal regarding the syntax-semantics interface of location verbs and the thematic interpretation of their external argument as well as my own analysis of the instrument-subject alternation. Section 5 concludes the paper.

## 2. Location verbs and the aspectual alternation

In García-Pardo (to appear), I argued that the argument structure of location verbs are built with prepositional structure. They start off as roots that lexicalize a preposition which takes two arguments: a Figure in (Spec,PP) and a Ground/Location complement of P. I assume, following Hale & Keyser's decompositional approach to PPs, that there can be two types of PP configurations: *i)* a terminal coincidence relation, composed of a dynamic PathP and a stative PlaceP, which denotes a change of location; *ii)* a central coincidence relation, composed of just PlaceP and denoting a stative location. Finally, a causative *v*P projects on top: the Figure argument raises to its specifier and it is interpreted as the 'initiator' or 'causer' (in the broad sense) or the eventuality.

I exemplify my structures for the sentences in (1) in (2).

(2)   a.   Change-of-location structure
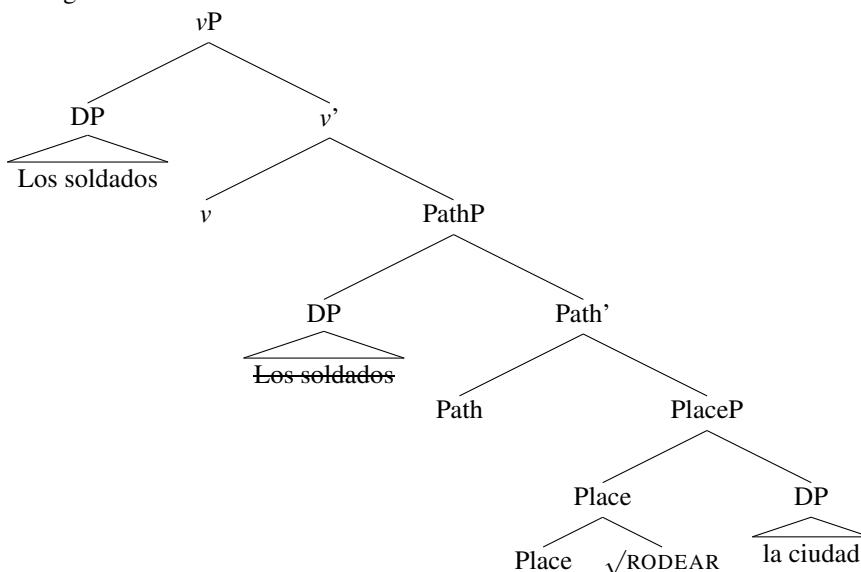
   b.   Stative locative structure
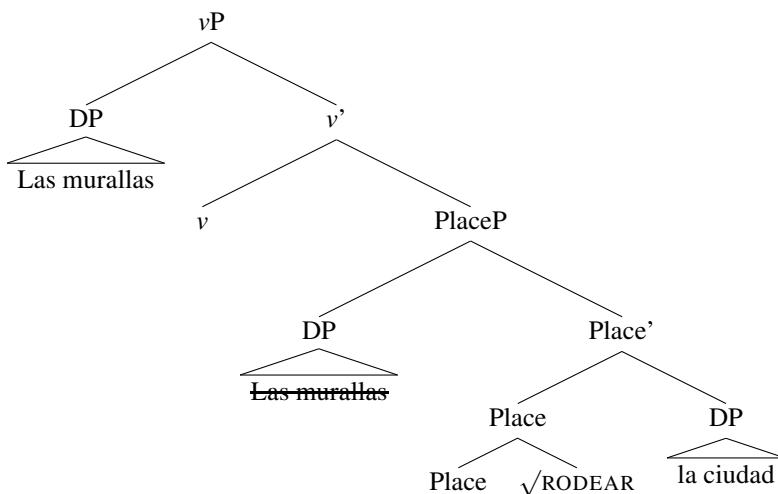
3. The I-S alternation
*3.1. Rothmayr's (2009) account*

As noted by Rothmayr (2009), location verbs can participate in the so-called instrument-subject (I-S) alternation[1]: if we have an eventive version with an agent and a PP-instrument, we can have a stative version that denotes the result state of the eventive version, where the PP-instrument is the subject (eg. (3) from Rothmayr 2009:38).

(3) a. Die Irmi füllt die Vase mit Wasser.
         the Irmi fills the vase with water
         'Irmi is filling the vase with water.'

     b. Wasser füllt die Vase.
         water   fills the vase
         'Water is filling the vase.'

Rothmayr proposes that both variants are derivationally related. The most basic one, structurally speaking, is the stative version (i.e. the I-S version), articulated by a VP that denotes a result state and is headed by a CAUSE operator (eg. (4)). For the eventive version, she argues that there is an extra projection on top of VP, *v*P, which introduces an agent argument and is headed by a dynamic DO operator. The subject of the stative version is now a PP-instrument which occupies the same syntactic position as in the stative version (eg. (5)).

(4) a. Die Haare verstopfen den Abfluß.
         the hair   obstruct   the sink
   'Hair obstruct the sink.'   (From Rothmayr 2009:48)

     b.
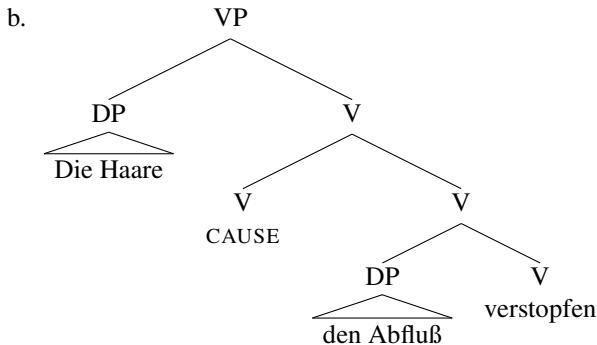
(5) a. Die Irmi verstopft die Straße mit ihrem Lastwagen.
         the Irmi obstructs the street with her   truck
         'Irmi is obstructing the street with her truck.'   (From Rothmayr 2009:49)

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[1] In fact, Rothmayr refers to these verbs as 'Instrument-subject alternation verbs'. Lest this label should be misleading, Rothmayr does not mean (and neither do I) that the subject of the stative version has an instrument role, but it only refers to the fact that such subject can have an instrumental role in the eventive version.

b.
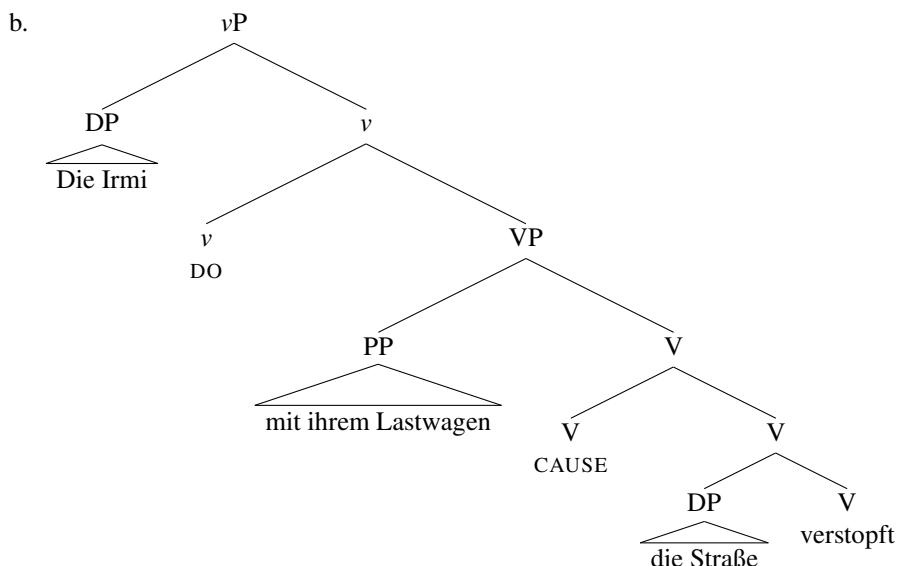
3.2. The Spanish data

I note that Spanish also shows the I-S alternation as described by Rothmayr (2009) (eg. (6)).

(6) a. La policía cubrió el cuerpo con la manta.
        the police covered the body   with the blanket

   'The police covered the body with the blanket.'

   b. La manta cubre el cuerpo.
       the blanket covers the body

   'The blanket covers the body.'

However, evidence from Spanish suggests that Maienborn's analysis is too restrictive. First, we can have stative versions with agent subjects and PP-instruments. For instance, (7) has a stative reading in which the police are holding a blanket over the body. The reading of the subject, note well, is agentive.[2]

(7) La policía cubre el cuerpo con la manta.
     the police covered the body   with the blanket

   'The police covered the body with the blanket.'

Crucially, I argued in García-Pardo (to appear) that the agent and causer distinction was not grammatically real (for location verbs, at least), and that the subject of location verbs bore the unspecified role of

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[2] A clarification is in order. In this discussion of the I-S alternation I am restricting the data to instrument causers, which are the only ones that display the I-S alternation (see Fillmore 1968; Cruse 1973; Talmy 1976; Hovav & Levin 1992; Levin 1993; Kamp & Rossdeutscher 1994, a.o., for the domain of telic verbs). Instrument-causers are non-trivially involved in bringing about the eventuality, as in (6a) or (7), where *the blanket* is obviously an indispensable entity for there to be an event of the blanket covering the body. On the other hand, pure instruments are merely auxiliary to the action of the agent, and cannot participate in the I-S alternation, as in (1): the sentence (1a) cannot have the I-S counterpart in (1b) under the reading where the police wore gloves while covering the body.

(1) a. La policía cubrió el cuerpo con guantes.
        the police covered the body   with gloves

   'The police covered the body with gloves.'

   b. #Los guantes cubren el cuerpo.
       the gloves   cover the body

   intended: 'The gloves cover the body.'

'originator' or 'causer' in the broad sense. While I still stand strong with the former claim, I believe that the latter should be reconsidered. Note again the eventive and stative versions in (8), repeated from (6a) and (7) for ease of exposition.

(8)   a.   La policía cubrió el cuerpo con la manta en cinco minutos.
          the police covered the body   with the blanket in five   minutes

          'The police covered the body with a blanket in five minutes.'   Eventive version

      b.   La policía cubre el cuerpo con la manta.
          the police covers the body   with the blanket

          'The police covers the body with the blanket.'   Stative version

Although in both cases the subject is an agent, its thematic-aspectual interpretation is different in each case. The eventive subject in (8a) does not need to act at the same time of the change-of-location event, i.e. it does not need to be temporally coextensive with the change-of-location subevent. For instance, the police could have thrown a blanket over the body from a distance and then left, only for the blanket to fall on the body some time later, or they could have pulled the blanket over the body all the way (the temporally coextensive reading). On the other hand, the stative subject in (8b) *must* be temporally coextensive with the change-of-location subevent, i.e. the sentence is not felicitous in a scenario where the police put or held a blanket over a body and then left, even if at that time the blanket is still over the body.

4. Proposal
4.1. Indirect and direct causers

For the modeling of this thematic distinction, I maintain the syntax for location verbs proposed in García-Pardo (to appear) but I further qualify the semantics of the structure. I assume, with Hale & Keyser (2002), that each projection in the VP decomposition denotes a subevent, and that each of these subevents are read off as being causally related from their syntactic contiguity. The idea is expressed in (9), where '→' stands for the causative relation (see also Ramchand 2008).

(9)   a.   V'
            ⌢
           V   VP
      b. $e_1 \rightarrow e_2$

Translating this to our syntactic structures for the I-S alternation, which I exemplify in (10) and (11), from (8), it follows that eventive versions have three subevents: the causative subevent (vP), the dynamic change-of-location subevent (PathP) and the result location subevent (PlaceP). On the other hand, the stative version has only two subevents, the causative subevent and the result location subevent, without a dynamic subevent in-between.

The immediate consequence of this is that the eventive subject is an INDIRECT CAUSER: it is not a subject of the eventive subevent of change-of-location, which directly brings about the result location. Thus, there is no requirement that the subject participates throughout that subevent from beginning to end, but merely that it causes it at some prior point. The stucture is given in (10a), and the semantics in (10b).[3]

The stative subject, on the other hand, is truly a DIRECT CAUSER: given that there is no dynamic subevent between it and the result location, and that the causative state is coextensive with the result state (Kratzer 2000; Pylkkänen 2000; Arad 2002), it follows that the subject will have to hold throughout the stative eventuality: once the subject stops participating, the result state will be over. See the example in (11).

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[3]   The semantics are inspired in Ramchand. *e* represents the macroevent composed of the smaller subevents, *s* is a state, e_{loc} a change-of-location subevent and s_{loc} a locative state.

What about the PP-instrument? In both structures, it is a FIGURE, given that it is a subject of the locative PP. In the case of dynamic structure in (10a), it undergoes displacement towards the GROUND, the result location. In the stative version it is merely in a locative relationship with respect to the Ground.

(10) a. Change-of-location structure
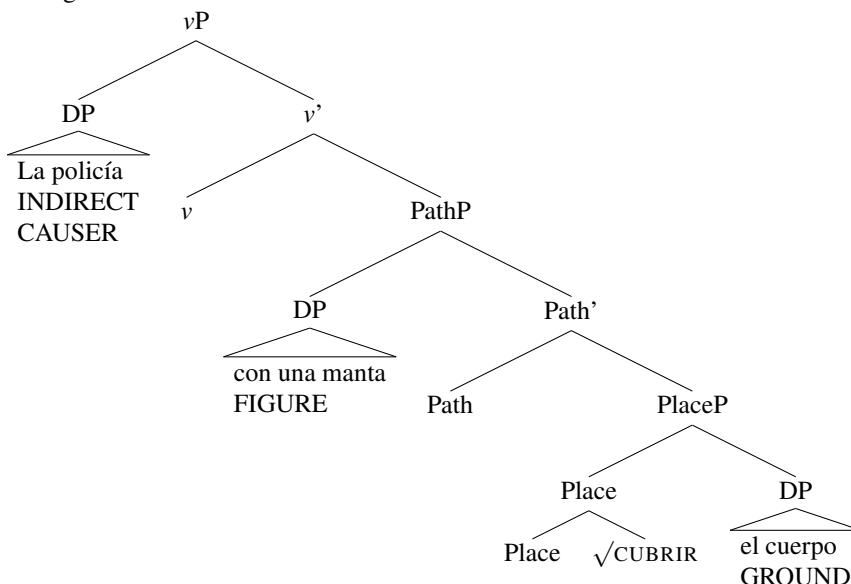
b. $\exists e,s,e_{loc},s_{loc}$ [e = s $\rightarrow$ e_{loc} $\rightarrow$ s_{loc} & Subject(La policía,s) & Subject(con una manta,e_{loc}) & CUBRIR(s_{loc}) & Ground(el cuerpo,s_{loc})]

(11) a. Stative locative structure
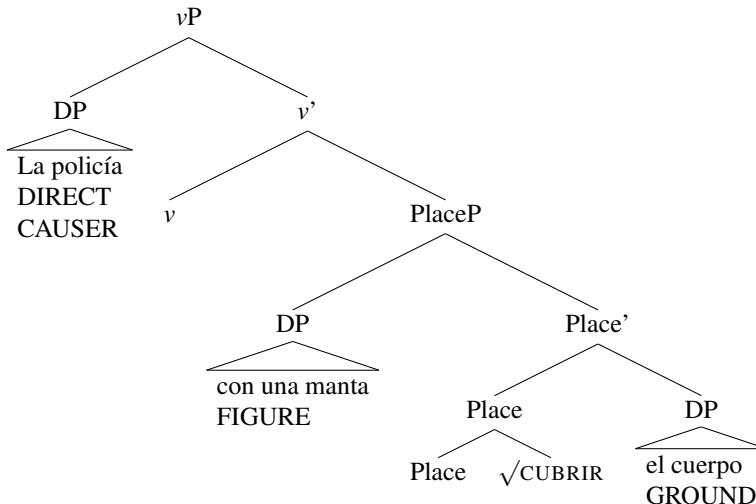
b. $\exists e,s,s_{loc}$ [e = s $\rightarrow$ s_{loc} & Subject(La policía,s) & Subject(con una manta,s_{loc}) & CUBRIR(s_{loc}) & Ground(el cuerpo,s_{loc})]

Note that, in the absence of an instrument-PP, the Causer subject, indirect or not, can also be interpreted as a Figure: such is the most salient reading of (1a), where it is the soldiers themselves that get together around the city (as opposed to, say, surrounding the city with barricades). In that case, following García-Pardo (to appear), the structure would be as in (2a), where the subject occupies both (Spec,*v*P) and (Spec,PathP). From the proposal I have set forth here, it follows that the subject is both a Causer and a Figure. Note that the subject in this configuration is no longer an Indirect causer as defined here, because by virtue of it also being the subject of the change-of-location subevent, it must participate actively throughout the temporal development of such subevent.

Importantly, the labels Indirect Causer, Direct Causer, Figure, etc. are not thematic roles in the classic sense. Rather, they are descriptions of the possible interpretations that verbal arguments may receive from the aspectual entailments of the structural positions they occupy. This is fully in line with the research program in Hale & Keyser (2002) and Ramchand (2008), that seeks to dispense with theta-roles as grammatical primitives and derive them solely from unambiguous, aspectually-meaningful syntactic structures.

4.2. Back to the I-S subject alternation

An issue that remains to be tackled is why the I-S alternation also involves an aspectual alternation (eg. (6)), i.e. why there cannot be an argument alternation where both variants are eventive or stative. In strictly telic verbs, in fact, this alternation can take place without an aspect alternation: see for instance (12), adapted to Spanish from Alexiadou & Schäfer (2006), where both the PP-instrument variant (12a) and the I-S variant (12b) are telic.

(12)   a.   La doctora curó al paciente con manzanilla en cinco días.
           the doctor cured the patient with chamomile in five days
           'The doctor cured the patient with chamomile in five days.'

         b.   La manzanilla curó al paciente en cinco días.
           the chamomile cured the patient in five days
           'Chamomile cured the patient in five days.'

I argue, following Dudchuk (2007), that the I-S alternation with telic verbs is derivationally related. I assume a tripartite VP for transitive telic verbs, in the spirit of Ramchand (2008), where *v*P introduces the external argument, VP introduces the instrument-causer and R(esult)P introduces the internal argument. The structures for the sentences in (12) are given in (13).

(13)   a.   [$_{v}$P El doctor [$_{VP}$ con manzanilla [$_{RP}$ curó al paciente]]]

         b.   [$_{VP}$ La manzanilla [$_{RP}$ curó al paciente]]

Why, then, cannot we do the same with location verbs? I.e. why cannot we have an aspectually-matching I-S alternation? The answer, I argue, is purely morphosyntactic. Recall that for the eventive agent + PP-instrument version (see (14a), repeated from (6a)), we proposed the structure in (14b) (see (10a), for the arboreal format).

(14)   a.   La policía cubrió el cuerpo con la manta.
           the police covered the body with the blanket
           'The police covered the body with the blanket.'

         b.
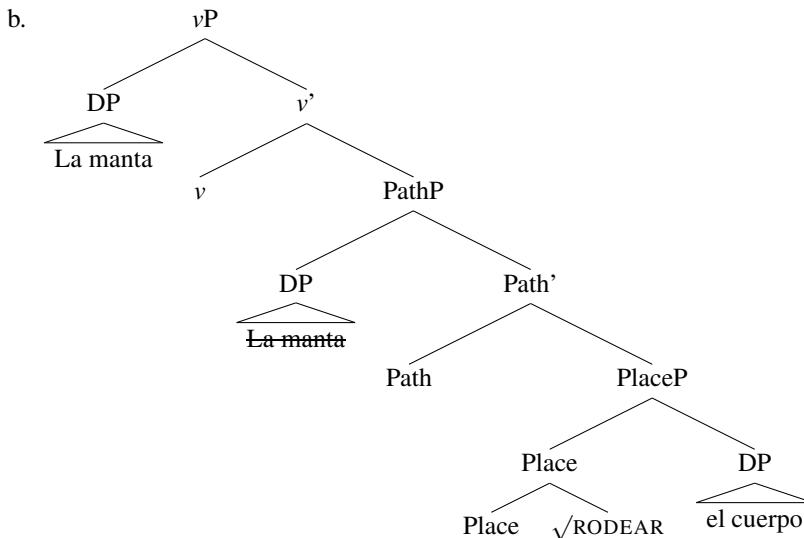
However, deriving the I-S subject version simply by not projecting *v*P would crash the derivation, because the root could not be verbalized without *v*, and so the sentence would end up without a verb (cf. (15)).

(15)   *[$_{PathP}$ La manta [$_{PlaceP}$ cubrió el cuerpo]]

A logical possibility around this would be trying to derive the alternation bottom-up. After all, we can have eventive sentences with subjects that could be PP-instruments in eventive versions as well (eg. (16a), which would have the structure in (16b)).

(16)   a.   La manta cubrió el cuerpo en unos segundos.
            the blanket covered the body   in some seconds

            'The blanket covered the body in a few seconds.'
       b.   [$_{vP}$ La manta [$_{PathP}$ ~~la manta~~ [$_{PlaceP}$ cubrió el cuerpo]]]

However, trying to add an extra argument on top to derive the agent+PP-instrument version won't work: we can only have at most one *v*P per clause (inasmuch as you don't find verbal predicates with stacking of external arguments), and thus deriving an agent+PP-instrument from an eventive I-S structure is not possible (see (17)).

(17)   *[$_{vP}$ La policía [$_{vP}$ con la manta [$_{PathP}$ ~~la manta~~ [$_{PlaceP}$ cubrió el cuerpo]]]]

This discussion brings us to an interesting conclusion: the I-S alternation is not derivationally related. By showing why we cannot derive the I-S alternation with aspectually-matching versions, we have actually shown that we cannot even derive the I-S alternation with aspectually mismatching versions, i.e. we cannot have a bare PlaceP for the stative I-S version and then project a *v*P, because the stative version also needs a *v*P. What we call the I-S alternation, then, actually involves two separate structures: an eventive one and a stative one which describes the result state of the eventive one.

5. Conclusion

This paper has argued that aspect-alternating location verbs do in fact show an asymmetry with respect to the thematic interpretation of their subject in the stative and eventive versions. Such differences have nothing to do with the lexical notions of 'Agent' or 'Causer', but rather, they have to do with whether the abstract causer or initiator of the verbal predicate must be actively involved throughout the eventuality or not. I have called the former Direct causer and the latter Indirect causer, and I have shown how those thematic differences can be derived straightforwardly from the aspectually-meaningful structure of the verb phrase. This is unlike previous syntactic accounts, which had no intuitive way of deriving the notions of "Agent" or "Causer" from the syntactic structure.

As a case study for my proposal, I have investigated the properties of the I-S alternation. In so doing, I have provided a morphosyntactic explanation as to why the I-S alternation with location verbs involves an aspectual mismatch, unlike what happens with canonical telic verbs. Interestingly, I have shown that the I-S alternation with location verbs is in fact not derivationally related at all: rather, it involves two separate syntactic structures, where the stative one denotes the result state of the eventive one.

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