Contact, Animacy, and Affectedness in Germanic

Björn Lundquist and Gillian Ramchand*

Abstract

This paper takes as its starting point the striking and systematic variation in the expression of direct objects in English, Swedish and German with respect to verbs of surface contact like 'kick' . While in English, *kick* can easily appear with an inanimate object as in *kick the door*, in Swedish and German the corresponding sentence must be expressed using a preposition. We propose that this difference between the languages reduces to an independent difference in the presence or absence of a null particle $\text{A}\textsc{t}_{loc}$ of central coincidence. Concentrating on the comparison between English and Swedish, we argue that this small difference in the availability of a lexical item has consequences for a range of different, apparently unrelated constructions across the languages. In addition, we argue for the central role of animacy in both languages in mediating the ability of an argument to appear in direct object positions interpreted as affected.

1 Introduction

This paper takes as its starting point striking and systematic variation in the expression of direct objects in English, Swedish and German with respect to internal arguments of verbs of contact like *sparka*-'kick'. In English, the verb phrase *kick the door*, with an inanimate direct object, is perfectly possible, while in Swedish and German this idea must be expressed with a prepositional phrase complement. To our knowledge, this particular set of facts has not been systematically explored in the literature before.

Briefly, the verbs that we could loosely describe as 'verbs of contact' can only take a DP object in Swedish and German if it is animate (1). Inanimates on the other hand are obligatorily expressed as PP's (2).[1]

(1) a. *Jag sparkade (på) honom (flera gånger). (*SWEDISH*)*
         I   kicked   (on) him   (many times)
         'I kicked him many times'

---

    b.   *Ich habe ihn (oft) getreten.* (GERMAN)
        I hace him (often) PREF.kick.PART
        'I kicked him often'
    c.   I kicked him (many times) (ENGLISH)

(2)   a.   *Jag sparkade *(på) bordet   (flera gånger). (*SWEDISH*)*
        I   kicked *(on) table.DEF (many times)
        'I kicked (on) the table (many times)'
    b.   *Ich habe *(gegen) den Tisch getreten.   (*GERMAN*)*
        I   have *(against) the table PREF.kick.PART
        'I kicked (against) the table'
    c.   I kicked (on/against) the table many times. (ENGLISH)

The two questions we wish to address in this paper are: (i) what is the source of this 'special behaviour' of animates?, and (ii) why don't the different languages under consideration here all allow the same range of possibilities? We will try to argue that animates are special across all three languages in being allowed to participate as 'subjects' of small clauses in a wider range of syntactic-semantic environments, but that the inter-language variation derives from the different lexical items that are available in building small clause predications, and in the licensing of null pronominal elements. More specifically, we will propose that the English lexicon contains a null AT$_{loc}$, that is absent from Swedish, German and presumably other Germanic languages.

2   Contact and Affectedness

Animacy has been shown to have effects in a wide variety of different constructions; animates in particular can bear 'thematic roles' with unique distributional properties in the domains of possession and even have a thematic role in the traditional inventory exclusively devoted to them (EXPERIENCER), found in, but not confined to psych verb constructions. Verbs of physical contact do not immediately spring to mind as an empirical domain where the special properties of animates should have an effect. However, we wish to demonstrate in this section that the effects are systematic enough that they should be included within the general phenomenon of 'increased predicational possibilities' for animates as opposed to inanimates. However, we do not wish to say that animates bear different θ-roles in the traditional sense, since the very same verbs are involved in each transitive predication. Rather, we wish to express the difference in terms of a correlation between affectedness and direct objecthood, where animates are felicitously interpreted as affected in more contexts than inanimates are. There is evidence from psychological experiments that animates are interpreted differently from inanimates at a very early age, and that animacy is a pervasive factor in processing language and interpreting the world more generally (Drenhaus and Féry 2007, Stowe 1989 inter alia). Specifically, animates are systematically inferred as affectors and affectees in contexts even where no overt physical changes can be objectively seen in a situation, unlike inanimate

actants (Wolff and Gentner 1995, Wolff 2007). Because animates possess an internal mental life, or at least are assumed to do so, they can 'affect' and 'be affected' without visible physical change. We will try to offer a definition of 'affectedness' that will be general enough to correlate with the linguistic category of 'object-hood' while allowing for a difference in the way in which animates and inanimates are integrated in predicational structure.

Verbs of contact such as *hit*, *kick*, *strike*, *punch*, *slap* etc. have received some treatment in the previous literature as a natural class, although the issue of animacy to our knowledge has not been explicitly addressed in the context of contact verbs. Putting animate objects of these verbs aside for the moment, it seems to be the case that the direct objects of these verbs are not prototypical by a number of criteria.

First of all, if one defines 'affected-ness' in terms of 'measuring out' as in Tenny (1994), these objects do not provide any scale along which the progress of the event can be measured. Similarly, notions like 'incremental theme' (Verkuyl 1972) or 'mapping to objects/mapping to events' (Krifka 1992) do not clearly apply. In particular, manipulating the quantizedness of the direct object makes no difference to the telicity of the verb phrase so formed.

(3)   a.   (After digging for 2 hours), John's spade struck solid sheet rock. (*telic, nonquantized object*)

       b.   (After digging for 2 hours), John's spade struck an old wooden coffin. (*telic, quantized object*)

This is not enough however, since it has been argued elsewhere that while DPs that satisfy 'mapping to objects' tend to be prototypical, they constitute only one subcase of prototypical objects. More importantly, even extending the notion of incrementality or scale to encompass 'change of property' and 'change of location' on the part of the object as in Ramchand (1997) also does not seem to apply to these kinds of objects. The extended notion of Ramchand (1997) forms the basis of her later notion of UNDERGOER: a changing property/location forms a 'scale' which the entity traverses homomorphic with the event.[2] Applying the notion of change to verbs of contact, we note firstly that the change they express is punctual. They are achievements in the sense of Vendler (1967), or possibly semelfactives (cf. Smith 1991). Put another way, they express a single discrete transition, not a continuous change. UNDERGOERS of punctual changes do exist, and are found as canonical direct objects of a large class of verbs, such as *break* or *kill*.

(4)   a.   John broke the stick.

       b.   John killed the spider.

In (4), the 'stick' clearly goes from an unbroken to a broken state, which is a salient and observable change on the part of that object. On the surface of things, the objects of *hit* and *punch* in English do not seem to be that different from objects of *break*. One could argue for example that they *are* affected, just in a more subtle and less tangible way from a 'real world' point of view. However,

there is crosslinguistic evidence, and evidence even internal to English that the verbs of contact are actually different from verbs of punctual change like *break*.

For example, Levin and Rappaport Hovav (2005) cite work by DeLancey (1995) on Lhasa Tibetan in which verbs like *break* and *kill* are transitive, but where verbs of surface contact have objects marked with a locative, or where the verbs themselves are expressed as verb-noun combinations (Levin and Rappaport Hovav 2005 pg 22). Nichols (1984) claims that this is a pattern common across the Caucasian languages. In the Slavic languages, Richardson (2007) argues that the 'accusative' object of surface contact verbs has an additional layer of prepositional (or applicative-like) structure, to account for the fact that these objects cannot control a depictive secondary predicate.

Within English itself, Levin and Rappaport Hovav (2005) point out that verbs of surface contact also show variability in the choice of internal argument not found with more canonical change of state verbs like *break* (see also Fillmore 1970). (Examples below from Levin and Rappaport Hovav 2005 pg 22)

(5) a. Lindsay hit the stick against the fence.
     b. Lindsay hit the fence with the stick.

Our paper seeks to provide some more evidence, internal to Germanic, that verbs of surface contact are special in that their internal objects are some how 'locational'. However, this property will be more clearly true of the inanimate contacted objects. In the next section, we show the facts from Swedish, and demonstrate that the factor of animacy needs to be taken into account as well. Our analysis will be that because of their special cognitive status, animates can be construed as affected and give rise to true canonical objects even with this class of verbs.

3 Distribution of Inanimate Objects in Swedish Verb of Contact

As noted in the introduction, there are many 'contact' verbs in Swedish which do not easily take inanimates in simple direct object position, but which require a PP. Depending on the verb, and the nature of the contact, the actual preposition may vary (see (6) vs. (7)).

(6) *Jag sparkade *(på) bordet   flera gånger.*
     I   kicked   *(on) table.DEF many times
     'I kicked the table many times.'

(7) *Jag bet *(i) äpplet*
     I   bit *(in) apple.DEF
     'I bit the apple.'

As can be seen from the examples below, these very same verbs easily allow an *animate* argument in direct object position without the PP.

(8) *Jag sparkade mannen flera gånger.*
     I   kicked   man.DEF many times
     'I kicked the man many times.'

(9) *Hunden bet mannen.*
     dog.DEF bit man.DEF
     'The dog bit the man.'

The list of verbs in Swedish that follows this pattern includes *slå* -'hit', *bita* -'bite', *slicka* -'lick', and *hugga* -'chop'.

Furthermore, for all these verbs (and the equivalent examples in German) the inanimate direct object becomes good once a resultative predicate is introduced.

(10) *Jag sparkade sönder bordet*
     I   kicked   apart table.DEF
     'I kicked the table apart.'

(11) *Jag bet äpplet   i två bitar.*
     I   bit apple.DEF in two pieces
     'I bit the apple in two pieces.'

We can expand this class further by noting a class of verbs that seem to *require* animate objects as part of their lexical content. These verbs resist (inanimate) body part objects directly, unlike in English where the animate is introduced as a possessor.

(12) *Kan inte du klia   mig (på ryggen)?*
     can not you scratch me (on back.DEF)
     'Can't you scratch me on the back?'

(13) ??*Kan inte du klia   (på) min rygg?*
     Can not you scratch (on) my back
     'Can't you scratch my back?'

Once again, an inanimate object is possible, once there is an additional resultative particle or PP.

(14) *Han kliade   sönder sårskorpan*
     He   scratched apart scab.DEF
     'He scratched the scab apart.'

Other verbs of this type include:*kittla*-'tickle', *klappa*-'pat', *sticka*-'prick', *nypa*-'pinch'.[3]

Some verbs of contact are ambiguous between a pure contact interpretation and an interpretation where contact leads to ballistic motion on the part of the contacted object. In these cases, the inanimate object that is in motion is perfectly grammatical without a preposition ((15) and (16)).

(15) *Jag sparkade bollen   i mål.*
     I   kicked   ball.DEF in goal
     'I kicked the ball into the goal.'

Similarly, if the 'instrument' of contact is chosen as the internal argument, it may appear without a preposition since it is the argument 'in motion'. (Recall that in English, verbs of surface contact can also participate in this alternation.)

(16)   *Jag högg kniven   i bordet.*
        I   stuck knife.DEF in table.DEF
        'I stuck the knife into the table.'

Yet another class of verbs of contact entail a visible surface change on the inanimate object: *buckla*-'dent', *repa*-'scratch', *märka*-'mark', and *skada*-'injure'. For these verbs as well, the 'changed' inanimate object is completely grammatical without a preposition, as in English.

(17)   *Han repade   ytan*
        he   scratched surface.DEF
        'He scratched the surface.'

The generalization that emerges is one that implicates objects of a subclass of verbs where contact is coincidental and where there is no visible outer change in property, quality or position of the object. Contact verbs of this type in Swedish and German cannot take inanimate direct objects. The intuition is that contactive coincidence is not sufficient for the inanimate to count as being 'affected'.[4]

Thus, we hypothesize that one factor in the explanation is that the notion of affectedness is encyclopedically different for animates and inanimates. While inanimates can only be asserted as affected by virtue of outward physical changes as a result of the action, animates can be affected by virtue of their inner world, by being experientially affected by the event. In the case of inanimates, the complement of a contactive motion must be the PP expressing a location, with the inanimate DP as the GROUND of that preposition (in the sense of Talmy 1978).

This of course is not the first time that it has been claimed that animate arguments have a special thematic role, particularly in object position. The examples that come immediately to mind are the Object Experiencer Psych verbs found in many languages. If one concentrates on the 'mental state' property of animates, one easily comes up with a paradox for theta role theory, where 'Experiencers' and 'Themes' can either align as Subject and Object (18-a), or Object and Subject (18-b) respectively.

(18)   a.   John fears tigers.   *Subject Experiencer Verb*
        b.   The tiger frightened John.   *Object Experiencer Verb*

But this misses a generalization. As shown early on by van Voorst (1992) among others, the affectedness property is a more efficient direct predictor of argument alignment than mental state experience in these verbs. Basically, in object experiencer verbs, the animate undergoes a clear change of state and the verb has a dynamic eventive interpretation alongside its stative one. Moreover, Levin and Rappaport Hovav (2005) point out that while object experiencer verbs are

very stable transitives crosslinguistically, there is a large amount of variation in the expression of subject experiencer relations. Thus, it seems clear that unlike the inanimate objects of surface contact verbs discussed in the previous subsection, animate objects in psych constructions are actually very stable and are prototypical direct internal arguments.

We are claiming essentially that when animates are the direct object of surface contact verbs, they *are* standard affected objects, no different from the objects of psych verbs, but structurally different from their inanimate contacted counterparts.

We think there is also independent evidence for the idea that animates trigger a different interpretation of 'affectedness' or 'change of state' from inanimates, even with superficially the very same lexical verbs. In the examples below, we see that even though the direct objects are interpreted as affected in both cases for these verbs, inanimates undergo a change in physical state or location, whereas animates (optionally) undergo a psychological change of state.

(19)   a.   John depressed the lever.
        b.   John depressed Bill with the news.

(20)   a.   John disturbed the papers on my desk.
        b.   John disturbed me with his constant chatter.

(21)   a.   John moved the papers.
        b.   John moved me with his tales of woe.

While the difference between *punching John* and *punching the wall* might seem to be more subtle than this, we propose that the same animacy effect is at work here, and has the ability to facilitate an interpretation shift from locative contact to change of state.

In the section which follows, we lay out our assumptions about argument structure representation in a syntactic constructivist framework. We will represent change of location/property arguments in a different structural position from non-change arguments. Since this is not a lexicalist theory where verbs are listed with a fixed 'argument structure', we will allow variable argument structure choices for a single verb, provided the event structure semantics of the verb is respected.
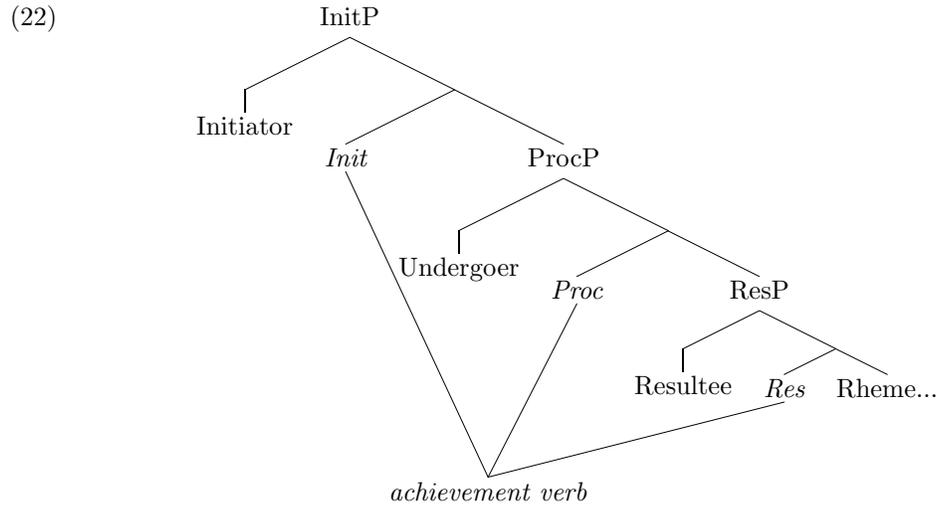
The representations we offer will embody two main points: (i) surface contact verbs do not take canonical direct inanimate objects that are 'affected' in either Swedish or English; (ii) with animate objects, surface contact verbs get a more canonical 'change of state' interpretation.

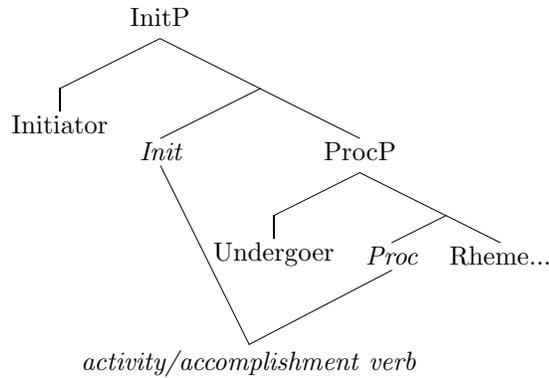# 4   Representing Affectedness

In this section, we implement argument structure relationships using the framework of Ramchand (2008). The full details of the system here are presented concisely for concreteness. Not all of the assumptions of this particular framework are crucial to the point we wish to make. However, we do think that an

explicitly constructional system such as Ramchand's is what is necessary here to account for the argument structure variability of the verbs in question. We also believe that the generalizations implicit in the patterns of data we will discuss come out clearly in a system that explicitly encodes small clause structures and allows them to compose with higher verbal structure. Ramchand's (2008) system seems to serve the purpose here. We lay it out in what follows and use it to formalize the intuitions expressed in the previous section.

In Ramchand 2008, the verb phrase can be maximally decomposed into three parts: (1) initP, denoting a stative initiation subevent and taking as its subject the INITIATOR of the event; (2) procP, denoting a process subevent that takes as its subject the entity that undergoes change (UNDERGOER); and (3) resP that denotes result state of an event, taking the holder of the result as its subject (RESULTEE). The verbal roots contain category features that match these subeventual heads. The roots identify the heads as they get inserted. A verb can identify more than one subevent, and an argument can be the subject of more than one phrase, giving rise to complex theta-roles. Either part can also contain rhematic material, i.e. a complement that doesn't introduce a new subevent but only modifies/measures out the subevent dominating it. These can come in any shape (i.e. DP, PP or AP). Both what we think of as functional items and lexical items carry category features.[5].

(22)

(23)

InitP

Initiator

Init   ProcP

Undergoer   *Proc*   Rheme...

activity/accomplishment verb

Note that Ramchand (2008)'s decomposition makes use of a recursive embedding of 'small clause' structures which each have a specifier position that represents the 'subject' of that particular eventuality. The notion of causal embedding, and 'subject of predication' are elements of the semantics that are built into the system as correlates of the hierarchical structure. This dimension of meaning is argued to be independent of the lexical encyclopedic content of vocabulary items. Both the notion of 'subject of predication' and 'affected object' will be relevant to our analysis, so we spell out what we mean by them in (24) below.

(24)　**'Subjects' of Predication**
(i) DPs in the specifier position of state-denoting XPs, are interpreted as the 'holder' of the property expressed by the X and its complement (see also Kratzer 1996).
(ii) DPs in the specifier position of dynamic (transition, or process)-denoting XPs are interpreted as the 'undergoing' the change in property expressed by that XP.

We can now define a notion of affectedness, which generalizes over the 'roles' or entailments accrued by a DP in the specifier positions of the lower shells of the verbal projection as follows.

(25)　**Affectedness**
Any DP that holds a property that is continuously changing, or that is the holder of a property that is a result of a change is defined as 'affected'. The property in question can be in the domain of 'quality' or 'location' depending on the particular lexical encyclopedic properties of the verb.

Thus, in Ramchand's system, being 'affected' is directly correlated with being a DP in a particular specifier position. Undergoers and Resultees count as being affected since they 'undergo' a property change, or acquire a new property

9

as a result of the action; DPs PPs and APs in complement (RHEMATIC) position are not subjects of predication and therefore do not have properties or changing properties ascribed to them, they *co-describe* the property represented by the head. Moreover, in Ramchand's system, only DPs can occur in specifier position, while any XP can in principle appear as the complement of a head.

Notice that the definition of affectedness does not make any direct reference to animacy. The sensitivity to animacy lurks in an understanding of what counts as the qualia of a particular entity— animates have a richer range of properties that can be ascribed to them than inanimates do. In a constructional system such as the one described above, verbs come encoded only with event structure (head category) information and arguments are Merged in the specifier and complement positions made available by the heads licensed by that verb. Once an XP is Merged in a particular structural configuration with a verbal head, it will be interpreted according to the rules of structural interpretation given above. Thus, any DP Merged as the specifier of procP *must* be interpreted as a kind of UNDERGOER. Depending on the verbal semantics and the referential properties of the DP so Merged, the result is either felicitous or infelicitous.

Turning to the contact verbs, in both English and Swedish, contact with animates is felicitously interpreted by Merging the animate directly in UNDER-GOER/RESULTEE position. While there is no obvious change of state in terms of external property or change of location that the contacted animate undergoes, we assume that this syntactic expression is legitimate because of the *internal* change of state assumed as a default by animates. We further assume that this is a fact about our cognitive system as human beings— that animates are assumed to be intentional, experiencing entities by default.

(26)
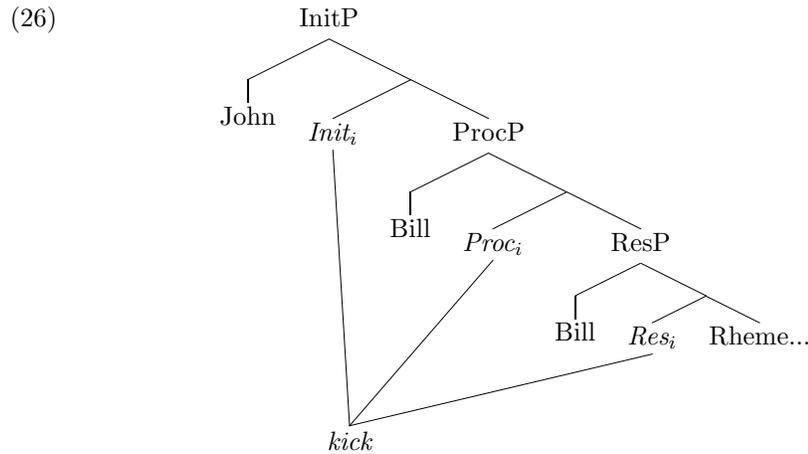
We further assume that this very same structure can also be built felicitously with an inanimate, once the inanimate shows physical outward signs of a change of state as in Swedish (or English) 'dent' etc.

Turning next to inanimates, recall that English parts ways with Swedish and

German when it comes to expressing coincidence with an inanimate object. The structural representation for the Swedish sentence needs to involve a PP, and by hypothesis, 'the table' is not represented as an 'affected' object since it is not in the specifier position of a change eventuality (27).
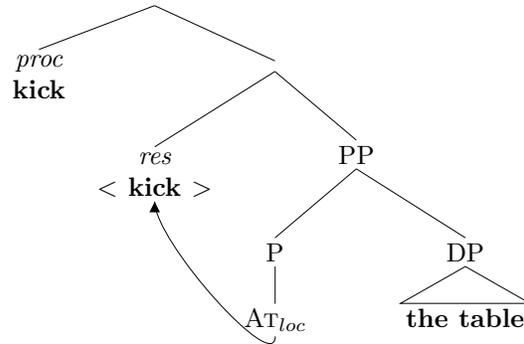
(27)
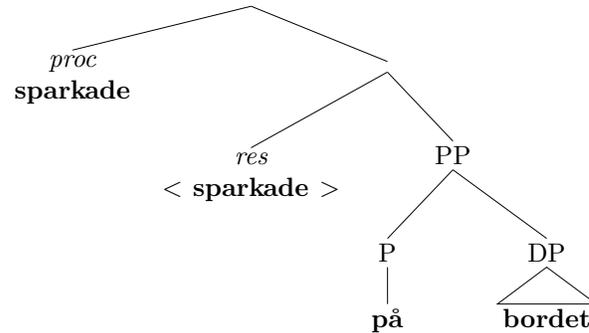
For the English construction, *John kicked the table* we are now faced with an analytical choice. We can give it the same kind of structure as we gave to *John kicked Bill* above, taking things at face value, or we could give it the same kind of structure as the Swedish sentence in (27). The problem with the first option is that it gives us a somewhat surprising answer to the question of what makes English different from Swedish in this area—it essentially says that English "conceives of" tables as being properly affected by kicking, while Swedish doesn't. Since we are unaware of any psychological/Whorfian difference between English speakers and Swedes with respect to their attitude toward tables, we find this unlikely. Another option is to give up on the straightforward mapping between structure and predicational entailments that is built into a system like Ramchand's. It strikes us as undesirable to give up too quickly on the strong hypothesis of a one-to-one syntax semantics mapping. The third option, and the one that we will pursue here, is that the English structure for *John kicked the table* is the same as the Swedish one, with the only difference that English possesses a null head expressing central coincidence (we will call it $\text{A\textsc{t}}_{loc}$), which can conflate into the verb *kick*.[6]

Thus, we offer the structure in (28) for *John kicked the table*. We assume that the null $\text{A\textsc{t}}_{loc}$ head is available in English and can incorporate productively into verbs of coincidental contact, making a PP complement of 'kick' into something that looks superficially like a DP complement.
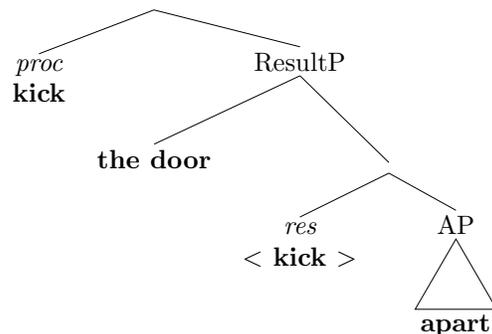
(28)

```
            proc
            kick
                        ┌──────────┐
                       res        PP
                    < kick >    ┌──────┐
                                P      DP
                                │    ┌────┐
                              Aт_loc  the table
```

Finally, constructions with an explicit resultative secondary predicate are also straightforward to derive in all three languages in this system. The 'subject' of the resultative small clause is raised to the derived resultee object position, as in standard cases of 'unselected' objects in the resultative construction (see Ramchand and Svenonius 2002, Ramchand 2008). Here, we predict that there should be no difference between animates and inanimates. This is because the 'result' expressed here is not mere contact/coincidence. Rather, here the result is explicitly expressed in a resultative small clause. This is the kind of observable change of state that 'counts' as a change of state for any DP.

We emphasize that in the constructivist system of verbal decomposition we are working with here, the properties of a verb like 'kick' are only specified by category features, not by argument structure grids. This means that DP/XP manifestation is not dictated by the verb as a template, but these projections can be merged into specifier positions freely as long as the basic category fingerprint (s-signature) of the verbal item is satisfied. Thus, it is not a problem in a system such as this for a verb like *kick* to occur in superficially different subcategorization frames. We think this is a good thing, since we do not want to be in the position where Swedish *sparka* 'kick' in 'kick Bill' and 'kick on the table' have to be listed as different lexical items.

(29)

```
        proc
        kick          ResultP
                   ┌──────────┐
                the door      
                          ┌──────────┐
                         res         AP
                      < kick >      ╱╲
                                   apart
```

At the end of this section, we now have one hypothesized language universal, and one language particular difference. The language universal is that animates

are interpreted as having an 'internal/experiential' existence which allows them to be conceived of as being 'affected' in the absence of any change of externally visible property or change in position. The language particular difference is that English possesses a null central coincidence/contact head (At_{loc}) which conflates into verbs of contact. We will for now assume that this null head is of the category Preposition, though we will end up analyzing it as a particle.

5 Distribution of Null At_{loc}

In last section we proposed tentatively that English has a null preposition At_{loc}, not present in Swedish and German. As is obvious, the distribution of this preposition in English is actually highly restricted, and we find many contexts where an overt preposition is needed. First we discuss some contexts where a null preposition *cannot* be used, with a view to imposing more general syntactic restrictions on the null element in question.

First, the following very basic examples contain a prepositional structure expressing central coincidence, and yet the overt preposition has to be used, in both English and Swedish:

(30) a. He arrived *(at) the station at five o'clock.
   b. He lives *(at) his parents place.
   c. He is *(at) the party.
   d. He sits *(at) the other table.

In all the examples above, the subject presumably originates as the external argument of the preposition, i.e. as the FIGURE argument:

(31) ... [He$_{figure}$ [at [the station$_{ground}$]]]

As far as we are aware, there is no inter-language variation for verbal structures where the eventual subject starts off as an external argument FIGURE of the PP. In these cases, the preposition always has to be visible. [7] (Note that it does not seem to be the subject that is interpreted as the FIGURE in verbs of contact. Rather the FIGURE in these cases is either an instrument, a body-part of the subject, or possibly even the verb itself, or the nominalized version of the verb - [kick [at [table]]].)

Another structure that seems to require overt prepositions in English just as in Swedish and German is the complement of 'put'-verbs:

(32) a. He put the flowers *(in) the vase.
   b. He placed the cup *(on) the table.

(33) flowers$_{fig.}$ [in [the vase$_{ground}$]]

A third structure, related to the complement of the 'put'-verbs, is double-object structures, and here the languages under discussion show similar patterns as well: the preposition is required unless the ground argument has been moved to

a position adjacent to the verb, which basically is only possible if the GROUND element is animate (These constructions will be discussed further in section 6):

(34)   a.   He sent the package (*to) France.
      b.   *He sent France the package. (unless metonymic interpretation of France)
      c.   He sent John the package.
      d.   He sent the package *(to) John.

In short, it seems to be the case that an overt preposition is needed in all languages under discussion where a DP FIGURE argument directly precedes the ground argument,[8] or when the FIGURE argument has moved to the subject position. Another way to descriptively isolate the AT_{loc} cases, is to note that the incorporated null preposition we found in English contact verbs occurs in contexts where the verb comes to assign accusative case to the original GROUND of the preposition.

However, there is another important context where a null preposition of central coincidence has been proposed for English, and where English and Swedish once again differ quite strikingly. In English, the ground element of a PP can 'conflate' into the verb and thereby form so called location verbs, as in (35) (see Levin 1993, Hale and Keyser 1993 and Harley 2005 for extensive discussion):

(35)   He bagged the flour

According to Levin (1993), these verbs are productively formed. A non-exhaustive list is given below (from Harley 2005):

(36)   bag, bank, bottle, box, cage, can, corral, crate, floor, garage, jail, kennel, package, pasture, pen, pocket, pot, shelve, ship (the oars), shoulder, tree

In Swedish, location verbs are basically absent, as shown in (37). [9]

(37)   a.   *Han lådade böckerna
         int. 'He boxed the books'
      b.   *De burkade ärtorna
         'They canned the peas'

If we follow Hale and Keyser (1993) in analysing these verbs as conflation from the complement position of a null preposition of spatial coincidence, the pattern can be explained by invoking the idea that English but not Swedish has a null AT_{loc} which can be used productively in this context.

(38)

```
            res           LocP
                 the books
                       AT_loc   BOX
```
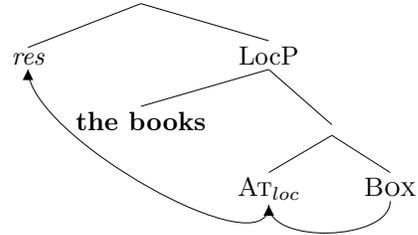
In German, this verb class seems to be vanishingly small as well, and the few verbs of this type we can find all have prefixes/incorporated particles.

It should be noted that other types conflated verbs exist in Swedish. For example, so called locatum verbs are fairly common:

(39)   vattna, peppra, salta, olja etc.
        water, pepper, salt, oil etc.

In other words, what is absent from Swedish is conflation of GROUND elements that are introduced by a preposition expressing central coincidence (i.e., AT_{loc}) (which is how Hale and Keyser 1993 classify 'location' verbs).

So, in addition to the cases where the GROUND of AT_{loc} comes to have direct object case, we have the cases of pure incorporation of the GROUND. If we follow the suggestion in Baker (1988) that incorporation obviates the need for structural case these two contexts begin to look like natural bedfellows.

Yet another context that seems to separate English and Swedish, is the availability of constructions in English that we choose to call "pseudo-middles", exemplified below (examples from Hale and Keyser (2002):

(40)   a.   This trailer sleeps (up to) three (gorillas)
        b.   This couch seats (up to) four (persons)

Presumably, these sentences also have a structure that involves locative substructure. If the null locative can incorporate into the verb, the internal argument is then free to be promoted to subject position in a 'middle'-like derivation, giving a superficially preposition-less structure:

(41)   sleeps [up to three gorillas$_{fig,}$ [AT_{loc} [this trailer$_{ground}$]]]

Taking the surface contact verbs together with these two cases, we see descriptively that the GROUND of our hypothesized null AT_{loc}, is always either incorporated into the verb, or a direct object of the verb-incorporated P complex. The pseudo-middles fit into this picture under the assumption that 'passivization' of the applicativized GROUND is what is responsible for the promotion to subject here.[10]

The generalization we see here is that our hypothesized null AT_{loc} seems to be particle-like in that it does not/cannot assign case to its complement. It occurs

in contexts where it incorporates into higher verbal structure; the semantic GROUND of the relation must be case licensed in some other way, either by the verb itself or by incorporation. The ungrammaticality of null AT_{loc} in simple locative structures shown at the beginning of this section is expected because of the lack of case available for the GROUND element in these constructions.

Seeing AT_{loc} as a kind of particle leads us to expect at least one other context where its presence might give rise to a difference between English and Swedish, namely, double object constructions where the GROUND of a prepositional relation is promoted to direct objecthood under certain conditions. We will argue against such a unification.

6 Double Object Constructions

As we have said, double object constructions are another place where 'promotion to Object' seems to take place. However, in isolating the relevant cases that might contain AT_{loc}, we need to be careful to distinguish purely locational constructions from ones involving possession. As we will show in the next subsection, possessional constructions involve a different set of predicational ingredients than the ones involved in physical contact, although this is perhaps not *a priori* obvious, especially given the fact that animacy effects show up here as well. Possession is a domain where a null predicational head has been proposed in a decomposed structure, and one which at first blush might seem to have similar semantic properties.

6.1 'Have', 'Give' and Possessional Small Clauses

In this subsection, we briefly examine the predicational structures associated with the English verb *have* and its Germanic cousins. We do not have anything substantially new to add to the literature here, but we summarize what we take to be a widely accepted view within the decompositional tradition concerning different kinds of possession and the role of animacy in these structures. We wish to show that possessional structures should be strictly distinguished from structures involving pure central coincidence. In particular, while both Swedish and English seem to agree on the distribution and licensing of possessional substructure, as well as the correlation between animacy and certain types of meaning, they *dis*agree on the representation of more directly locational predications, once the two types are clearly distinguished.

As pointed out by Belvin 1993 and Déchaine et al. 1995, simple alienable possession in all three languages is confined to animates, while inanimates as the subject of 'have' are only licit when the possession is inalienable/inherent.

When it comes to simple 'have', there is general agreement that a special kind of predicational head is involved in the decomposition, but it is a rather more subtle and theory-internal matter to decide how that predicational head should be specified. Is the Possessor the complement of a P relation (AT_{poss}), or the specifier of a relation more like (WITH) with a reversed FIGURE/GROUND

configuration? Is AT_{poss} related to a generalized locative of central coincidence, as in fact claimed by Déchaine et al. 1995? Or is it distinct?

This tricky questions aside, one thing is clear: Swedish and English do *not* seem to differ significantly in the use and distribution of 'have'.[11] Both languages can use simple 'have' with animate alienable possession, and with inanimates when the possession is inalienable. Moreover, with verbs like 'give', which have been widely argued to contain 'have' substructure (Harley 2002, Pesetsky 1995), the two languages seem to agree on when a 'double object' structure is licit, as illustrated in the following Swedish examples:

(42) a. *Han gav Maria en bok*
          He   gave Maria a   book
          'He gave Maria a book.'
      b. *Han gav telefonen   en ny   design*
          He   gave telephone.DEF a   new design
          'He gave the telephone a new design. '
      c. **Han gav bordet   ett glas*
          He   gave table.DEF a   glass
          '*He gave the table a glass.'

Basically, the restriction seems to be the same as the one found in simple 'have' structures, roughly confining the relationships to animate alienable possession or inalienable possession.[12]

It is beyond the scope of this paper to commit to a particular representation for possessional structures, although we think that the comparison with locative and motion constructions is telling. We assume that the same predicational head is involved in these constructions as the one that has been claimed to live inside the decomposition of 'have', because of the same restrictions with respect to animacy and semantic relation. For example, for 'give' verbs, we would assume the presence of a null AT_{poss} head, or its equivalent, in the complement of the 'result' projection. This would then incorporate into the lower decompositional head of the 'give'-verb (following Hoekstra 1988, Harley 1995. and Ramchand 2008). The GROUND of that relation would then move to a higher specifier position in the verbal decomposition (presumably, the RESULTEE position in a Ramchandian decomposition) where it could receive structural accusative case. The restriction to animates and inalienable possessors would then be due to the particular semantics of AT_{poss}, which we independently know to be constrained in this way.

In addition, both English and Swedish seem to use the relevant possessional head productively as well, licensing the addition of a possessor argument to creation verbs, where the added DP comes to hold a possessional relationship to the original direct object. Thus, creation verbs will work the same way as 'give', under the assumption that verbs that denote the creation of a direct object can also optionally incorporate the equivalent of AT_{poss}.

(43)   *Han bakade henne en kaka.*
      He   baked her   a cake
      'He baked her a cake.'

The point about these constructions is that Swedish and English do *not* differ here, indicating that At_{loc} is not involved.

Thus, the systematic differences we have shown between English and Swedish in the first section are *not* to be identified with cases of possessional substructure, even though animacy effects were seen here too.[13] The fact that spatial location behaves differently from possession has implications for how such structures are ultimately decomposed, and how they are related to BE constructions in pure locatives and existentials. Following through on these implications is beyond the scope of this short paper, but we have laid out the examples here because they will contrast strikingly with the complex spatial examples we explore in the next subsection.

6.2   Motion and Location

We predict that when it comes to verbs of ballistic motion, Swedish, German and English will once again diverge, showing that the At_{poss} head is not the predicational head that is implicated. We argue here that pure verbs of motion/contact do not allow incorporation of At_{poss}, but only one of pure spatial coincidence, which we will call At_{loc}.

In English, double objects are possible in this context, while in Swedish they are not.[14]

(44)   a.   **Han sparkade/kastade/slängde Johan bollen*
         He   kicked/threw/hurled   John ball.DEF
         'He kicked/threw/hurled John the ball'

    b.   *Han sparkade/kastade/slängde bollen   till Johan*
         He   kicked/threw/hurled   ball.DEF to Johan
         'He kicked/threw/hurled John the ball'

We offer the following decomposition for English, where the At_{loc} incorporates via the *res* into the verb.

(45)   ...throw $[_{resP}$ Maria $[res\ [_{SC}$ the ball $At_{loc}\ \langle Maria \rangle\ ]]]$

Note that inanimate indirect objects are impossible here as well in English, showing that animacy is once again at work, even though, by assumption, the incorporation of the relevant head is possible:

(46)   *He threw the fence the ball

We do not think that At_{poss} is implicated in these English constructions because it does not allow the same range of possessional relations that were allowed in the 'have' construction.

(47)   a. *I threw John a hat (where John owns a hat as a result of the
             throwing)
        b. *I threw the dollshouse a new roof.

Since Swedish has no null At_{loc}, the double object version of ballistic motion
verbs is not possible.

Interestingly, German gives us an intermediate case here for ballistic motion:
the overt instantiation of At_{loc}, *zu* is available and visibly incorporates into the
verb, giving a 'double object' construction.

(48)   a. *Ich habe ihm/ihn   den ball geworfen.*
            I   have him.DAT/him.ACC the ball thrown
            'I threw him the ball.'
        b. *Ich habe ihm   den ball zugeworfen.*
            I   have him.DAT the ball AT.thrown
            'I threw him the ball.'

We speculate that the expression of the DP in the higher specifier is depen-
dent on two things: (i) the incorporation of the P element, whether null (as
in English) or overt (as in German)and (ii) the availability of an affectedness
construal for the GROUND of that P, so that it may be felicitously interpreted
in the RESULTEE position.

The relevance of incorporation in licensing the movement of the GROUND
element (or base generation in the higher specifier) can be shown by other
examples in Swedish where an appropriate P head seems to 'incorporate' in the
relevant sense. Putting aside the details of the analysis, we assume that the
Verb-particle construction in Swedish (distinguished by particle stress on the P
element) is the equivalent of the prefixed particle construction in German, in
that it is somehow 'incorporated' into the verbal domain (see Svenonius 1996
for discussion). Under these conditions, we see that the GROUND of the P must
appear as the direct object of the verb-particle combination (49-a), rather than
as the complement of the P (49-b).[15]

(49)   a. *Jag satte   på Kalle hatten*
            I   placed on Kalle hat.DEF
            'I put on Kalle the hat.'
        b. *Jag satte   hatten   på Kalle*
            I   placed hat.DEF on Kalle
            'I put the hat on Kalle.'

As pointed out by Toivonen (2003), the possibility of reversing the FIGURE and
the GROUND in this way in these constructions is dependent on animacy.

(50)   a. *Jag satte   koppen   på bordet*
            I   placed cup.DEF on table.DEF
            'I put the cup on the table. '

b. *_Jag satte på bordet   koppen_
    I   placed on table.DEF cup.DEF
    '*I put on the table the cup.'

The constraints on the shift suggest that a small clause structure is involved: Swedish allows the apparent shift only when (i) the preposition/particle moves to a verbal head/incorporates and (ii) the promoted DP is animate.[16] We note that to get this word order, animacy is required since as we have assumed before only an animate can be represented freely as an affected argument in the higher RESULTEE position.

We have good evidence that animacy is crucial to 'affectedness promotion' and not alienable vs. inalienable possession, because we can construct cases of inalienable position where the FIGURE and GROUND are both _in_animate. We predict that the incorporation of _på_ up to _res_ position through HAVE should still be possible, but base generation of an inanimate DP in RESULTEE position should _not_ be allowed. What actually happens in Swedish when you try to 'place a lid upon the jar' is extremely interesting—we present the examples in (51).

(51)   _Jag satte på locket på burken_
        I   placed on lid.DEF on jar.DEF
        'I put the lid on the jar.'

The same thing happens with the preposition/particle _i_ 'in'.

(52)   _Jag stoppade i ett mynt i jukeboxen_
        I   put   in a coin in jukebox.DEF
        'I put a coin in the jukebox.'

The preposition seems to be doubled in these cases: one copy in the so-called 'particle' position receiving typical particle stress; the other copy in the base generated position linking locative FIGURE and GROUND. Speakers report that this doubled structure enforces the possessional/part-whole interpretation of the construction. For example, (51) cannot be interpreted as the lid being placed on top of a jar it doesn't belong to in a non-canonical way, while the example in (53) without doubling _can_ be so interpreted.

(53)   _Jag satte locket på burken_
        I   placed lid.DEF on jar.DEF
        'I put the lid on the jar.'

Further, when no part-whole relation holds between the FIGURE and the GROUND, no doubling is allowed:

(54)   _Jag satte (*på) glaset   på bordet_
        I   placed on   glass.DEF on table.DEF
        'I put the glass on the cup'

Thus, particle shift is dependent on incorporation into the higher verbal struc-

ture, which in turn is dependent on there either being a possessional or part-whole/belonging relationship at stake. However, the promotion of the GROUND object to direct object status is strictly dependent on animacy. (We have nothing interesting to say about the fact that the preposition here is spelled out in both positions—it seems like a last resort option forced by the fact that an overt DP GROUND cannot be licensed by an unpronounced preposition).

7 Conclusion

In this paper, we have examined a number of linguistic constructions in English, Swedish and German which differ in the way that they treat animates in argument position. While all three languages seem to agree in treating animates differently somewhere in their grammars, they nevertheless differ in exactly how this is manifested. We have speculated that the 'special'-ness of animates is a universal fact for human language, and we have offered some decompositions that reflect this fact (ones that we claim have at least some crosslinguistic generality). The universal decompositions we have offered centre on two main types of structure. Firstly, we claimed that animates were 'better' UNDER-GOER/RESULTEES because the assumption of mental activity allows them to be construed as affected even when there is no overt physical sign of change. This makes them better 'subjects' of dynamic subpredications. [17]

An important aspect of the framework we assume in this paper is that verb meaning decomposes into various predicational and modificational substructures, some of which can introduce 'extra' subjects of predication. Under the implementation we assume, lexicalization of verbal meaning spells out by the equivalent of head-to-head movement/incorporation. Using this framework, we argued that the differences among the three languages should not be accounted for in a piecemeal fashion construction by construction, for such a strategy would miss the generalization that many of these effects cluster together. The effects are so intricate that it doesn't seem to us that the differences should be captured by means of some global parameter either. Instead, we offered an analysis whereby the systematic differences in detail of implementation follow from the availability of a few abstract null lexical items. In particular, the existence or not of a null incorporating AT_{loc} particle: found in English, but not German or Swedish) gives rise to a number of far-reaching effects in different structural positions (inanimate object of contact verbs; derived object of ballistic motion verbs; denominal location verbs.

Notes

[1] We note that this phenomenon is similar to but different from the more well-studied conative alternation also found in the Germanic languages (Kratzer 2004):

(i) John ate an apple.

(ii) John ate *at* an apple.

In the conative alternation, the presence of the preposition seems to correlate with atelicity and lack of complete affectedness. In the case of the alternations described above, both the

animate object and inanimate object are equally 'impacted', and the construction is telic in both cases, but only the latter surfaces with a preposition.

[2]Note that Ramchand 1997 also distinguishes between a DP which itself *forms* the path or scale by virtue of its material extent, and a DP which *travels* the property scale. The latter are the UNDERGOERS, while the former are PATHS.

[3]We have chosen to exclude verbs like *spotta* ('spit') and *tafsa* ('paw'), since they require PP complements in English ('I spat *(in) his face'), and while they can take animate but not inanimate DP complements in Swedish, this argument is necessarily followed by a PP: *Jag spottade honom *(i ansiktet)* - lit. ('I spat him in the face').

[4]There are a number of verbs that are more difficult to classify on the basis of introspection. In particular, there seem to be verbs with contactive coincidence semantics do allow inanimate objects quite readily, like *smeka*- caress, *massera*- massage and *kyssa*-'kiss'. We assume that these verbs must have a richer semantics than that of pure coincidence that actually involves some manipulation of the internal argument. Right now our only direct evidence for this is the lack of locative preposition on the internal argument.

The Swedish equivalent of the English verb 'touch', *röra* might also look like an exception to the rule that states that inanimate objects that are not visibly changed require an overt P in Swedish. A sentence like *rör inte mina grejer* ('don't touch my stuff!') is well-formed, without any visible change on the object being implied. Possibly, here as well, we do actually infer some change in the object (the object will become "touched"). In general, the verb *röra* requires an incorporated particle/prepositon or a PP complement when no change is implied in an inanimate object: *han vidrörde/rörde vid väggen* ('I touched (at) the wall').

[5]In fact, in Ramchand (2008), the very strict distinction between L-morphemes and F-morphemes, or roots and functional items, is eliminated, since both lexical and functional items host category features, and both lexical and many items that other people would call 'functional' possess some encyclopedic content. It is of course possible in this system for a vocabulary item to possess only category features, but no encyclopedic content. In that case, the item is there to license the structure, which itself carries structural semantic information.

[6]In English, many contact verbs seem to be denominal, or at least they have nominal forms that are form-identical with related verb. Under a decompositional approach, following Hale and Keyser 1993 we could spell this out in a structure where the complement structure of the result part of the verb is headed by a nominal which incorporates/conflates into the *res* head. Under this view then, the AT_{loc} would conflate into the N head first, which in turn conflates into the lower verbal head along the direct complement line. This may be correct, but we abstract away from this detail here, since, as we will show later, it is not crucial to the generalization about locative incorporation. See also Lundquist (2009) for an analysis of "denominal" verbs that does not involve an underlying nominal representation.

[7]There might be a handful of exceptions to this generalization. For example, all languages allow DP objects of verbs like 'reach' and 'leave', even though one might argue that they also have an underlying locative PP-structure (*he reached the top* - [he_{fig} [AT [the top_{ground}]]]). We have nothing interesting to say about these verbs.

[8]This is extends to strictly nominal contexts as well: *the arrival *(at) the station*, *the book *(on) the table* etc.

[9]We know of only a few exceptions: *fängsla* 'jail', which requires an animate/human object; the particle verb *bura in* ('cage in'), which also requires an animate/human object; and *lagra* 'storage'.

[10]We assume that the post verbal DP in pseudo-middles is not a structural direct object, but a 'measure phrase' of some type and is not assigned structural accusative case.

[11]The two languages differ in the pronominal elements at their disposal in creating the anaphoric dependencies required in certain small clause constructions with 'have', but they do not differ in the semantics and distribution of the 'incorporated' P head found in 'have'.

[12]English and Swedish also seem to agree on the ability to use 'give' as a light verb in conjunction with bare event nominals corresponding to our verbs of surface contact discussed in section 3 (*Jag gav dörren en lätt spark* - 'I gave the door a light kick'). This construction seems to have no animacy restrictions, and it rests on the denominal character of many verbs of contact which we are abstracting away from here, and on the ability of 'give' to be used as a light verb. Discussing these 'complex predicates' would take us far beyond the scope of

this paper. Crucially, we do not think their analysis involves At_{loc}; the structural properties of the predication in these constructions are determined by the light verb, which as we have seen does not significantly differ between English and Swedish.

[13]In the next subsection we will pursue our earlier claim that an additional factor in the promotion of GROUND elements is the ability of that GROUND element to be construed as an affected participant. The fact that 'have' constructions also show an effect of animacy is an indication that within their own decompositional structure a similar reversal is at work, with similar consequences. However, we choose to decompose 'have' no further here since it poses the additional complication of the semantics of possession.

[14]There is apparently some dialectal variation with respect to indirect objects with verbs of ballistic motion. In Platzack (2005) examples like (44-a) are judged as grammatical. This variation is at the moment being investigated within the NorDiaCorp project. So far, only 15 out of 102 informants find indirect objects with ballistic motion verbs acceptable.

[15]See Svenonius 2005 for a discussion of these constructions in terms of 'particle shift' followed by movement of the GROUND element to a higher specifier position. As shown by Svenonius, [på Kalle] does not form a constituent in (50-a), while it does in examples like (51-a).

[16]Here we follow Toivonen 2003, and not Svenonius 2005 who claims that the correct generalization is that of 'possession'.

[17]Animates may also be better 'subjects' of stative predications because they have the extra option of being asserted as the 'owner/possessor' of an object or 'experiencer' of a state, as in the reversal that plausibly takes place within the decomposition of HAVE itself.

References

Baker, Mark C. 1988. *Incorporation: A Theory of Grammatical Function Changing*. University of Chicago Press, Chicago.

Belvin, Robert S. 1993. The two causative *have*s are the two possessive *have*s. In *Papers from the 5th Student Conference in Linguistics, MITWPL 20*, edited by Vern M. Lindblad and Michael Gamon, MIT Working Papers in Linguistics, pp. 19–34. MIT, Cambridge, Ma.

Déchaine, Rose-Marie, Teun Hoekstra, and Johan Rooryck. 1995. Augmented and non-augmented *have*. In *Langues et Grammaire I*, edited by Léa Nash and Georges Tsoulas, pp. 85–101. Paris VIII, Paris.

DeLancey, Scott. 1995. Verbal case frames in English and Tibetan. Ms. University of Oregon.

Drenhaus, Heiner and Caroline Féry. 2007. Animacy and child grammar: An OT account. *Lingua* 118: 222–244.

Fillmore, Charles. 1970. The grammar of 'hitting' and 'breaking'. In *Readings in English Transformational Grammar*, edited by Roderick Jacobs and Peter Rosenbaum, pp. 120–133. Ginn.

Hale, Ken and Samuel Jay Keyser. 2002. *Prolegomenon to a Theory of Argument Structure*. No. 39 in Linguistic Inquiry Monograph. MIT Press, Cambridge, MA.

Hale, Kenneth and Samuel Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, edited by Kenneth Hale and Samuel Jay Keyser, no. 24 in Current Studies in Linguistics, pp. 53–109. MIT Press, Cambridge, MA.

Harley, Heidi. 1995. Subjects, Events, and Licensing. Ph.D. thesis, MIT, Cambridge, Ma.

Harley, Heidi. 2002. Possession and the double object construction. In *Linguistics Variation Yearbook*, edited by Johann Rooryck and Pierre Pica, vol. 2, pp. 29–68. John Benjamins Publishing Company, Amsterdam.

Harley, Heidi. 2005. How do verbs get their names? Denominal verbs, Manner incorporation, and the ontology of verb roots in English. In *The Syntax of Aspect*, edited by Nomi Erteschik-Shir and Tova Rapoport, pp. 42–64. Oxford University Press, Oxford.

Hoekstra, Teun. 1988. Small clause results. *Lingua* 74 2-3: 101–139.

Kratzer, Angelika. 1996. Severing the external argument from the verb. In *Phrase Structure and the Lexicon*, edited by Johann Rooryck and Laurie Zaring, pp. 109–137. Kluwer, Dordrecht.

Kratzer, Angelika. 2004. Telicity and the meaning of objective case. In *The Syntax of Time*, edited by Jacqueline Guéron and Jacqueline Lecarme, pp. 389–423. MIT Press, Cambridge, Ma.

Krifka, Manfred. 1992. Thematic relations and links between nominal reference and temporal constitution. In *Lexical Matters*, edited by Ivan A. Sag and Anna Szabolcsi, pp. 29–53. CSLI, Stanford, Ca.

Levin, Beth. 1993. *Verb Classes in English*. MIT Press, Cambridge, MA.

Levin, Beth and Malka Rappaport Hovav. 2005. *Argument Realization*. Research Surveys in Linguistics. Cambridge University Press, Cambridge.

Lundquist, Björn. 2009. Noun-verb conversion without a generative lexicon. In *Nordlyd 36,1: Special issue on Nanosyntax*, edited by Peter Svenonius, Gillian Ramchand, Michal Starke, and Knut Tarald Taraldsen, pp. 169–190. University of Tromsø, Tromsø.

Nichols, Joanna. 1984. Direct and Oblique Objects in chechen-ingush and russian. In *Objects: Towards a Theory of Grammatical Relations*, edited by Franz Plank, pp. 182–209. Academic Press, London.

Pesetsky, David. 1995. *Zero Syntax: Experiencers and Cascades*. MIT Press, Cambridge, Ma.

Platzack, Christer. 2005. The object of verbs like *help* and an apparent violation of UTAH. In *Organizing Grammar. Studies in Honor of Henk van Riemsdijk*, edited by Hans Broekhuis, Norbert Corver, Riny Huybregts, and Jan Koster, pp. 483–494. Mouton de Gruyter, Berlin.

Ramchand, Gillian. 1997. *Aspect and Predication: The Semantics of Argument Structure*. Oxford University Press, Oxford.

Ramchand, Gillian. 2008. *Verb Meaning and the Lexicon: A First Phase Syntax*. Cambridge University press, Cambridge.

Ramchand, Gillian and Peter Svenonius. 2002. The lexical syntax and lexical semantics of the verb-particle construction. In *Proceedings of WCCFL 21*, edited by Line Mikkelsen and Christopher Potts, pp. 387–400. Cascadilla Press, Somerville, Ma.

Richardson, Kylie R. 2007. *Case and Aspect in Slavic*. Oxford University Press, Oxford.

Smith, Carlota S. 1991. *The Parameter of Aspect*, vol. 43 of *Studies in linguistics and philosophy*. Kluwer, Dordrecht.

Stowe, Laurie. 1989. Thematic structures and sentence comprehension. In *Linguistic Structure in Language Processing*, edited by G. Carlson and M. K. Tanenhaus, pp. 319–357. Dordrecht.

Svenonius, Peter. 1996. The verb-particle alternation in the Scandinavian languages. Ms. University of Tromsø.

Svenonius, Peter. 2005. Particle shift and XP movement. Handout, Comparative Germanic Syntax Workshop, Tilburg.

Talmy, Leonard. 1978. Figure and ground in complex sentences. In *Universals of Human Language*, edited by Joseph H. Greenberg, vol. 4, pp. 625–649. Stanford University Press, Stanford, Ca.

Tenny, Carol. 1994. *Aspectual Roles and the Syntax-Semantics Interface*. Kluwer, Dordrecht.

Toivonen, Ida. 2003. *Non-projecting Words: A Case Study of Swedish Particles*. Kluwer, Dordrecht.

Vendler, Zeno. 1967. *Linguistics in Philosophy*. Cornell University Press, Ithaca, N.Y.

Verkuyl, Henk J. 1972. *On the Compositional Nature of the Aspects*. Reidel, Dordrecht.

van Voorst, Jan. 1992. The aspectual semantics of psychological verbs. *Linguistics and Philosophy* 15 1: 65–92.

Wolff, Phillip. 2007. Representing causation. *Journal of Experimental Psychology* 136 1: 82–111.

Wolff, Phillip and D. Gentner. 1995. What language might tell us about the perception of cause. In *Proceedings of the seventeenth annual conference of the Cognitive Science Society*, edited by J. D. Moore and J. F. Lehman. Lawrence Erlbaum, Pittsburgh, Pa.