

# AGENCY AND CASE: A LATTICE-BASED FRAMEWORK

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## Abstract

The typological literature has demonstrated that parameters such as agency, affectedness, and object individuation affect the realization of case-marking. The proposed analysis captures the specific contribution of such parameters, resulting in a model capable of explaining case alternations. A feature-based representation of agency properties is proposed, loosely based on Dowty's proto-role theory, but reformulated in terms of privative opposition and hierarchically organized via a lattice. Theoretical gains include wider empirical reach and greater simplicity, while practical results include a detailed analysis of the genitive/accusative alternation in Russian occurring with certain scope-ambiguous verbs, e.g. 'seek'.

Modulation of parameters such as agency, affectedness and object individuation are known to affect the realization of case-marking (Hopper and Thompson 1980). Yet, explicitly connecting individual parameters with the semantics of case alternations has largely proven elusive. Often, realizations of case cannot be attributed to one sole parameter, but arise only in the context of the interaction of several. These parameters are complex, and a large amount of typological work has sought to give them internal order on a universal basis, e.g., thematic, definiteness and animacy hierarchies. In the next section, I decompose the most fundamental parameters for argument structure, agency and affectedness, into feature-based representations, organized in section 2 into a lattice structure. This lattice in turn models argument structures. In section 3, the core semantics of a case is correlated with a region of the lattice, and by merging the lattice with the definiteness hierarchy, also decomposed in terms of features, I derive an account of the genitive/accusative alternation in Russian. In essence, the proposed framework yields both explanations of the semantic basis of case alternations and a more complete picture of how such parameters interact—in the meantime bringing the typological closer to the logical.

## 1. The Primitives of Argument Structure: Agency Properties

The parameters of agency and affectedness can be captured by a set of event-based properties entailed by the verb, inspired by the approach of Dowty 1991. How-

ever, the work of Dowty 1991 was elaborated taking the transitive situation as given, therefore many of the proto-properties posited in Dowty 1991 are defined in terms of multiple participants, i.e., “causing an event or change of state in another participant”. This assumption leads to difficulties in treating constructions beyond the typical transitive situation, such as the middle voice. Further, the properties of Dowty 1991 include the complex notions of ‘affectedness’ and ‘causation’ taken as primitive. Affectedness has long been noted not to be a binary concept, but a three-way distinction between unaffected, partially or totally affected. Causation is a complex notion, and in fact a composite one: implying at least two participants, and some sort of direct link between them. An increase in simplicity and empirical reach can be gained by reformulating the properties without reference to other participants and complex notions.

I use one set of properties, which can be conceived as of two types: one corresponding to the active ingredients of agentivity and the other to affectedness. The first set is comprised of the properties *volition*, *sentience*, *motion*, and *instigation*. The second set is cast in terms of *persistence*. Persistence is a two-tiered notion, for something can persist existentially, that is, its essence remains the same throughout the event/state, or it can persist qualitatively—i.e., it persists in all its particulars. Either of these can obtain at the beginning and/or the end of the event—in terms of features, we have the following set: *existential persistence (beginning)*, *existential persistence (end)*, *qualitative persistence (beginning)*, and *qualitative persistence (end)*. Establishing agency properties in this manner leads to two diametrically opposed classes in privative opposition, one a full agent possessing all the properties, and the other not entailing any, not even independent existence—e.g., arguments of negative existence statements or incorporated/cognate objects (“sing a song”).

Affectedness can be reformulated as a lack of persistence during the event; further, this feature configuration is able to capture the different degrees of affectedness with respect to existence. Totally affected patients, e.g., verbs of destruction/consumption (‘destroy’, ‘eat’) entail that their object argument persists existentially at the beginning of the event, but not at the end. Patients which are partially affected (e.g., objects of verbs such as ‘damage’ or ‘move’) persist existentially throughout the event, but do not persist qualitatively, i.e., they are changed in some manner. Unaffected entities, most often agents, persist both existentially and qualitatively throughout the event. The opposition between agents and patients falls out from this feature system in that agents will possess total persistence along with a number of other agency properties while patients will generally possess no properties save initial persistence and possibly *existential persistence (end)*. The composite property of causation can be replaced by two more primitive ones: *instigation* and *– persistence(end)* (either qualitative or existential). Causation, then, can be represented as a pair: (ArgX: + *instigation*, ArgY: – *persistence(end)*)<sup>1</sup>.

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<sup>1</sup>The results of this framework are conservative with respect to the gains of Dowty 1991. However, there is an empirical advantage to the proposed framework in that it can treat constructions outside the typical

## 2. Hierarchization of Agency Properties

The above has established a set of properties which make up a predicate's argument structure. Logical entailments among the eight features constrain the combinations possible. For instance, *volition* entails *sentience*, since only sentient beings are capable of volition, and *–existential persistence (end)* entails *–qualitative persistence (end)*, since if an entity does not exist at the end of the event, clearly none of its qualities do either. The remaining combinations can then be given greater structure. The sets of agency and persistence properties can be separately ordered by inclusion, giving rise to a lattice structure for each. The Cartesian product of the agency and persistence structures results in a larger lattice, shown in figure 1, referred to henceforth as the agency lattice. Note that the privative opposition is conspicuous in the structure: the highest node contains all the features (the full agent), the lowest contains none (event internal objects).

The parameter of object individuation—here, definiteness—is submitted to a similar treatment. Categories of definiteness can be reworked as a set of features (e.g., *referring* and *given*) ordered by inclusion, as in (1a), and corresponding to the definiteness hierarchy, seen in (1b).

- (1) a.  $\emptyset < \text{referring} < \text{referring, given}$   
 b. Non-Specific Indefinite < Specific Indefinite < Definite

As opposed to the agency features which are predicate entailments, definiteness is endemic to the NP. Therefore, when a predicate's argument is instantiated with an NP, in this framework it is viewed as a merge of agency and individuation features.

## 3. The Genitive/Accusative Alternation in Russian

The agency features above are responsible for argument realization, i.e., which arguments are selected as subject, object, etc. One central function of case is to mark subjects (objects) as such, thus there is a necessary link between case and agency

transitive situation—for instance, the middle voice in Ancient Greek, as shown in (1) (Lyons 1968):

- (1) Louómai  
 Wash.1st.SING.MIDDLE  
 I am washing (myself).

Since there is only one participant in (1), the proto-properties “causing an event or change of state in another participant” and “causally affected by another participant” are undefined, and the only proto-properties that obtain are “undergoes a change of state”, but this is not sufficient to differentiate subjects of verbs in the middle voice from subjects of verbs in the passive. What one would like to see is that the subject ‘causally affects’ himself, but this does not seem possible as long as causation is defined with respect to distinct participants. If instead, causation is defined, as discussed above, as a property for pairs (*ArgX*: + *instigation*, *ArgY*: – *persistence*) where *ArgX* and *ArgY* are not taken to be necessarily distinct, then this relation is applicable to the washer. For further details, see Grimm 2005.

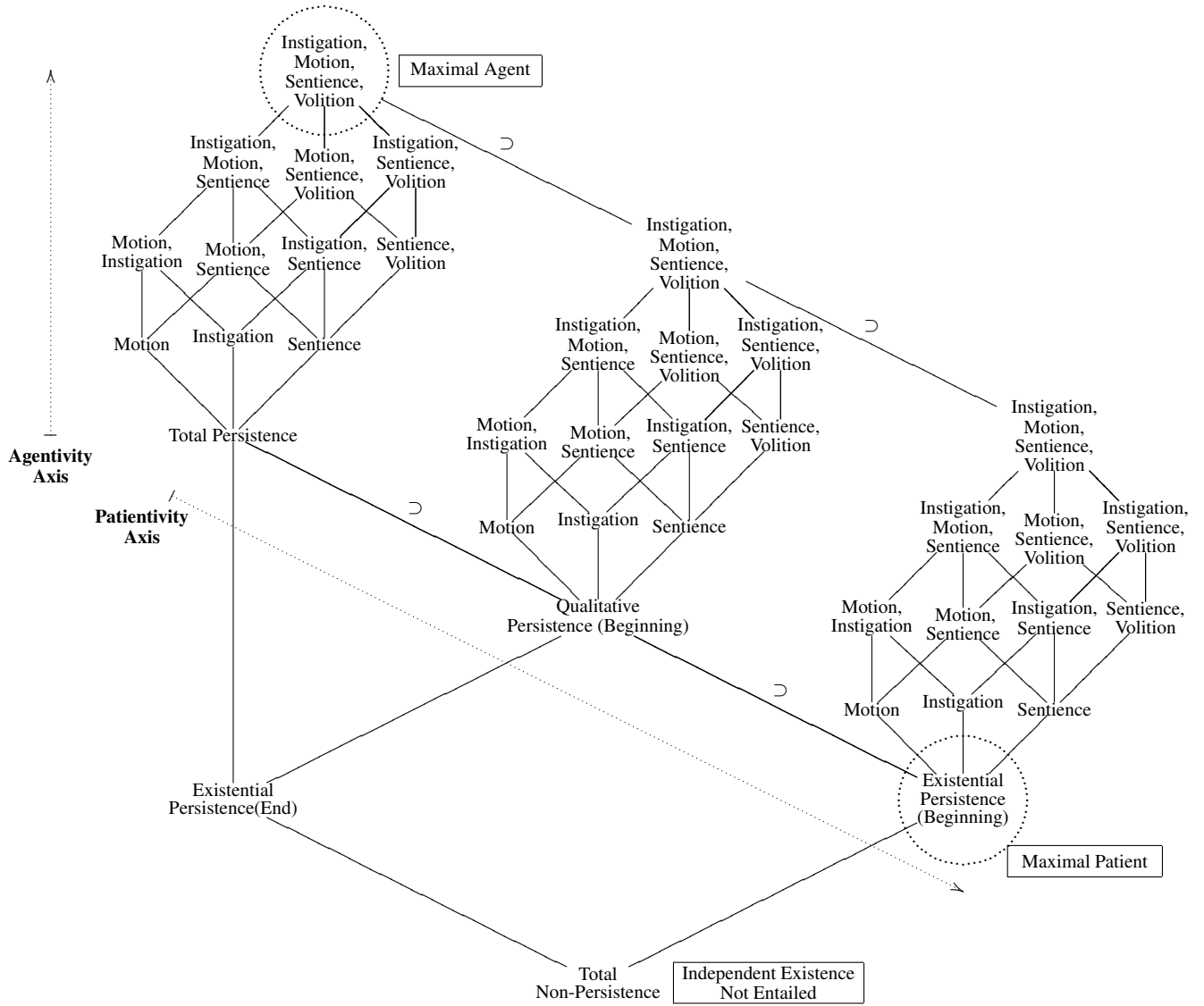


Figure 1: Transitivity Region

features. In languages with sufficiently expressive case systems, a subject (object) can be marked by a variety of cases. For instance, different sorts of object arguments will be marked by different cases, e.g., recipients versus affected objects. Yet, these arguments can then be defined in terms of agency properties, and so one can define

the core semantics of a case with respect to these agency features. A case-marker, then, can be seen as ranging over one or more (connected) node(s) in the lattice. Yet, case assignment is not solely determined by argument structure, since the nominal instantiating the argument has its own semantic contribution which may or may not be consistent with the specifications of the argument structure. This is exemplified by the following alternation in Russian between genitive and accusative case on the object.

- (2) RUSSIAN (Wierzbicka 1981)
- a. Ivan ždet                    tramvaj-a  
   Ivan is-waiting-for tram-GEN  
   Ivan is waiting for a tram.
  - b. Ivan ždet                    tramvaj  
   Ivan is-waiting-for tram-ACC  
   Ivan is waiting for the/a certain tram.

Prima facie, (2) appears to mark (in)definiteness, and has been claimed as a form of differential object marking based on definiteness (Naess 2004). I claim that this is only true indirectly: it is a result of the interaction between the degree of definiteness of the NP and agency entailments on the verb. If definiteness were the only relevant factor, one would expect this alternation to apply generally; however, the above alternation is limited to verbs such as ‘seek’, ‘await’, ‘want’, ‘fear’—verbs which are ambiguous between narrow- or wide-scope readings. While such verbs entail various agency properties in their subjects, they have no entailments for their objects, for to wait for a train does not necessitate that such a train exists. Note that with these verbs, the genitive marks the narrow-scope reading<sup>2</sup>. Historically, these verbs once marked their objects exclusively with the genitive case, and only gradually over the last century did this case alternation take hold.

Aside from this alternation, the more frequent use of the genitive as a verbal argument is to express lack of existence. For instance, “when an existential predicate is negated, the entity whose presence is denied is expressed in the genitive” (Timberlake 2004). Correlating this fact with the agency lattice, the governed genitive is used when existence of the object is not entailed, and therefore the genitive is associated with the lowest node of the lattice, *Total Non-Persistence*. In contrast, the accusative case marks objects of transitive clauses, and since these objects are generally affected in some way, they must be in existence before the onset of the event. Therefore, the region of the accusative covers at least the node *Existential Persistence (Beginning)*.

Definiteness enters the picture in the following way. Recalling that Ioup 1977 showed that referring arguments only have wide-scope readings, clearly an individuated (referring) object is not consistent with the semantics of the genitive, but instead forces a wide-scope reading, which *is* consistent with the semantics of the accusative.

<sup>2</sup>Russian morphology is well-known to be sensitive to wide- and narrow-scope interpretations. Dahl 1970 showed that the distribution of two suffixes of indefinites distinguished precisely these two readings.

The proposed framework captures this quite naturally. NPs which are specific or higher on the definiteness hierarchy, hence *+referring*, entail that the entity exists. Upon combining with the agency properties entailed by the predicate, the argument must then minimally possess the feature *existential (beginning)*, which locates the object in the region of the accusative case. If the NP is non-specific (non-referring), independent existence is not entailed, and it can remain on the lowest node of the lattice—but then this locates the object in the region of the genitive case. Therefore, definiteness is the crucial factor underlying this alternation, yet it is mediated by agency properties, which in turn explains the alternation's limited distribution.

#### 4. Conclusion

A reformulation of the approach of Dowty 1991 with simpler primitives and in terms of privative opposition has led to greater empirical reach and a structured framework capable of accounting for the core semantics of case assignment. A principal advantage of this approach is its ability to unite multiple semantic parameters, as demonstrated by its account of the genitive/accusative alternation in Russian.

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#### Bibliography

- Dahl, O.: 1970, Some notes on indefinites, *Language* 46, 33–41  
Dowty, D.: 1991, Thematic proto-roles and argument selection, *Language* 67, 547–619  
Grimm, S.: 2005, The lattice of case and agentivity, *Master's thesis*, ILLC : University of Amsterdam  
Hopper, P. J. and Thompson, S. A.: 1980, Transitivity in grammar and discourse, *Language* 56, 251–299  
Ioup, G.: 1977, Specificity and the interpretation of quantifiers, *Linguistics and Philosophy* 1, 233–245  
Lyons, J.: 1968, *Introduction to Theoretical Linguistics*, Cambridge  
Naess, A.: 2004, *Transitivity*, Ph.D. thesis, Universiteit Nijmegen  
Timberlake, A.: 2004, *A Reference Grammar of Russian*, Cambridge  
Wierzbicka, A.: 1981, Case marking and human nature, *Australian Journal of Linguistics* 1, 43–80