

SIL Electronic Book Reviews 2010-001

Proto-properties and grammatical encoding: A correspondence theory of argument selection

By Farrell Ackerman and John Moore

Stanford Monographs in Linguistics. Stanford, CA: CSLI Publications, 2001. Pp. ix, 177. hardback \$59.95, paperback \$22.00. ISBN 1-57586-167-4 (hardback), 978-1-57586-167-8 (hardback), 1-57586-166-6 (paperback), 978-1-57586-166-1 (paperback).

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Currently case theory and argument realization are of much interest to linguists, as evidenced by Miriam Butt's *Theories of case* (NY: Cambridge University Press, 2006) and Beth Levin's and Malka Rappaport Hovav's *Argument realization* (NY: Cambridge University Press, 2005).¹ In fact, Miriam Butt's book piqued my interest in the book under review; she mentions the authors as proponents of a lexical semantic approach to explaining case and argument realization.

Using a lexical semantic approach, Ackerman and Moore (A & M) set out to explain morpho-semantic (i.e. "meaning induced") variations in argument encoding, for example, Finnish genitive-partitive case alternations, causatives, and dative subjects. They avoid strictly syntactically induced case alternations such as the passive, limiting themselves to "semantically induced morphosemantic encoding operations" (p. 13). They "assume a theory in which some grammatical function changing operations merely yield realignments of grammatical functions with invariant argument arrays or invariant predicate entailments, while others are motivated by changes in the semantics of predicates" (p. 12).

A & M's ultimate goal is to account for "both grammatical function and case marking alternations by appealing to the same basic explanatory apparatus" (p. 10). This allows them to predict case marking on the basis of relative proto-properties of a single verb ("syntagmatic" properties—the predicate relations stipulated in the lexicon for a given verb), and on the basis of compared properties between two or more verbs ("paradigmatic" properties—comparison between the lexically stipulated predicate relations for the verbs under consideration). Obviously, the authors' proposed theory involves the lexical stipulation of predicate roles and case frames for each verb in any given language. It also rests on the "assumption that sets of semantic properties, valence, and grammatical function inventories are all independent and related by principles of correspondence" (p. 42).

The authors base their account of semantically induced case alternations on David Dowty's theory of proto-roles. A well-known, now classic article (Dowty 1991) "proposes that the grammatical function encoding for arguments of basic active transitive predicates is best

formulated in terms of the two proto-roles, PROTO-AGENT and PROTO-PATIENT” (p. 29). In chapter 2 (Grammatical Theory and Semantic Roles) A & M review Dowty’s arguments against semantic roles as traditionally conceived (for example, in Fillmore 1968, another linguistic classic), and discuss the basic properties of each proto-role.

In chapter 3 (A Proto-Role Proposal: Syntagmatic Argument Selection) A & M “present Dowty’s (1991) proto-type solution to these problems” (p. 27), along with A & M’s other basic theoretical assumptions. The incorporation of Dowty’s proto-role theory allows the authors to incorporate Dowty’s principles of correspondence (p. 34); these principles provide a means of predicting how verb arguments will be lexicalized. On the basis of Finnish and Malayalam the authors further argue that valence is independent from other levels of representation and serves to “mediate the relation between proto-properties and grammatical function assignment” (p. 48). Originally, Dowty conceived of PROTO-AGENT and PROTO-PATIENT as “a static generalization over possible lexical entries”; the uniqueness of the authors’ approach is found in using Dowty’s proposal “to develop a theory of morphosemantic alternations” (p. 61).

In this vein, chapter 4 (Paradigmatic Argument Selection) expands Dowty’s principles of correspondence to grammatical function alternations triggered by psych-predicates (experiencer verbs) and causatives. For psych-predicates “the syntagmatic selection principle correctly determines which argument will be subject and which will be object” (p. 66), i.e. experiencers can be coded as subject when they are as proto-agentive as the stimulus; this occurs when there is no change of state in the experiencer. Paradigmatic principles “handle the contrasting encodings for the object alternation.” In the case of causatives, syntagmatic correspondence relations determine the encoding of the causative subject, and paradigmatic correspondence relations must be appealed to in order to figure out the relationship between case and proto-patients.

In Chapter 5 (Bounding Entities) A & M explore the relationship between “proto-agent and proto-patient properties” and “proto-transitivity properties” (the latter based on the work of Hopper and Thompson 1980, another linguistic classic).² They propose a new proto-patientive property, BOUNDING ENTITY, closely related to the aspect TELICITY; the former term refers to the proto-patientive property, and the latter to the verbal property (a lexical entailment). For them, an argument is a BOUNDING ENTITY if the predicate is telic, and “entails that a subpart of the denotation of the entity that corresponds to [the argument] expresses the end-point of any telic event denoted by [the predicate]” (p. 97). Telicity is normally considered to be a “a property of clauses or verb phrases” (p. 104), but the authors argue that it is necessary to propose telicity “as a property of predicates” and BOUNDING ENTITY as a paradigmatic selection principle. They cite Finnish and Estonian case alternations such as the Finnish alternation in (1) below, where the partitive and accusative cases alternate according to whether the whole book was read or not³:

- (1a) Terttu luki kirjaa (tunni-n).
Terttu read-PAST.3SG book-PART (hour-GENITIVE)
‘Terttu was reading the book (for an hour).’
- (1b) Terttu luki kirjaa (tunni-ssa).
Terttu read-PAST.3SG book-ACC (hour-INESSIVE)
‘Terttu read (all) the book (in an hour).’

Part of A & M's proposal involves arguing that BOUNDING ENTITY differs from INCREMENTAL THEME as proposed in Dowty 1991, based on pairs such as the following⁴:

- (2a) Kim drank water.
- (2b) Kim drank the water.

where both sentences involve INCREMENTAL THEME, but the cumulative theme structure of example (2a) (inherently atelic) contrasts with the quanticized theme structure of example (2b) (inherently telic). "Some predicates may entail BOUNDING ENTITY without also entailing INCREMENTAL THEME" (p. 103); this is the difference between "the stative predicate 'know' and the achievement predicate 'recognize'" (p. 102).

Here I felt that the authors do not do justice to Dowty's concept of incremental theme. Dowty defines INCREMENTAL THEME as follows: "If a theme x [proto-patient] is part of y [proto-patient], then if a telic predicate maps y (as Theme) onto event e , it must map x onto an event e' which is part of e " (1991: 567). In a discussion of an analogous example (using beer instead of water), Dowty considers the analogue of 2a to represent a "homomorphic predicate mapping some quantity...and its subparts into a corresponding event and its sub event...so this sentence...can simultaneously describe an event and sub events of that same event" (1991:568). In other words, Dowty does not view 2a as an example of "cumulative theme"; he views "drink" in both cases as telic predicates, and the difference between the two is not due to telicity, but instead due to alternative readings of a noun as a bare plural or a "mass term argument" (1991:567). Instead of adding discrete sub events, A & M add discrete quantities of proto-patient, so that for A & M INCREMENTAL THEME becomes quantification of the proto-patient argument.⁵ The discrepancy is due to differing definitions of telicity: Dowty defines a "telic sentence as denoting a unique event, i.e. one having no proper sub events describable by the same sentence" (1991:568), whereas A & M conceive of telicity as event boundaries. The different approaches are likely a result of subscribing to distinct theories of aspect.⁶

In chapter 6 (Subject Alternations) the authors explore paradigmatic alternations of proto-agents, where "a semantic contrast in degree of agentivity should correspond to an encoding alternation between canonically-marked subjects and other more oblique encodings" (p. 141), using Polish and Russian inversion and Hindi dative subject data. The authors use the term "inversion" to refer to "nominals that are encoded like indirect objects, yet exhibit certain subject behaviors" (p. 142). Previous researchers have concluded that in many examples "the inversion nominal is not construed as being volitionally involved in the event...[and]...can be construed as causally affected by the event" (p. 151); it is missing a crucial proto-agentive property and demonstrates a crucial proto-patientive property. Examples where one would expect inverse marking in Polish, but it does not occur, as in 3a, b below, suggest that the proto-properties are not inherent in the nominal, but instead are entailed by the verbs themselves.⁷

- (3a) Janek zauwazył błąd *(celowo).
John-NOM noticed-MASC mistake on purpose
'John noticed the mistake/* on purpose.'
- (3b) Janek zauwazyło się błąd z Przyjemnością.
John-DAT noticed-NEUT REFLX mistake with enthusiasm
'John noticed the mistake with enthusiasm.'

According to A & M, these inversion constructions involve “grammatical function alternation”: dative marked nominals do not exhibit subject properties, but instead the sentence exhibits properties of impersonal constructions (such as the reflexive *siḡ* in example 3 above), and the dative marked nominal behaves as if it were an unaccusative. (In contrast, dative subject constructions the dative-marked nominal is as much a grammatical subject as its nominative-marked paradigmatic counterpart: “the grammatical function remains constant while surface case alternates” (p. 157)). The contrast is triggered by lack of a proto-agentive property (in this case volitionality) and the presence of a proto-patientive property (in this case causally affected, or GOAL). Within the authors’ theory this analysis entails two lexical representations for Hindi verbs such as *dek^haa* ‘see’: one that specifies a volitional subject and one that does not. In other cases there are morphological differences, as the verb *k^huś huaa* ‘become happy’, specified for a volitional subject, and *k^huś huaa* ‘happen happiness’, specified for a causally affected subject.

In Chapter 7 (Conclusion) A & M summarize the theory that they have proposed in this book. They consider the backbone of their proposal to be the “Syntagmatic and Paradigmatic Selection Principles” (p. 169), addition of the BOUNDING ENTITY to the list of proto agentive properties in Dowty 1991, and the extension of the paradigmatic selection principle to lexical classes of verbs which are not morphologically related. They wrap up the book with a brief comparison to alternative argument selection and linking theories.

The weaknesses of this book are mostly expositional or editorial in nature. For instance, I did not really grasp the content of the section titled “Correspondence Theory” (pp. 10-13) until I read my way through to p. 46, where I found the statement “This is the core architecture of the Correspondence Theory”—at the end of Section 4.1. I concluded that pp. 34-46 must also be part of the explanation of Correspondence Theory, and that I would not have had as much trouble with the exposition if pp. 10-13 and pp. 34-46 were ordered after the foundational material of pp. 14-33. After reading Chapter 6, I concluded that I would have had less trouble following the exposition if the difference between “inversion” and “dative subjects” had been clearly stated at the beginning; I did not grasp the difference until I read the discussion on p. 158.

I found using the index to be a frustrating experience; it seems to have been put together in a hurry. For instance, one finds EXISTENTIAL, but not the associated term CARDINAL (from p. 127 in the text); “NP-RELATED” appears, but not “NP-strength”; and “INCREMENTAL THEME” is missing. The normal expectation would be to find all terms written in caps in the index, and it would be helpful if they were also written in caps there as well as in the text of the book. Curiously, the authors and editors, as far as I can tell, offer no explanation for why the terms in caps are written this way in the text; after reading through the book twice, I assume they are basic theoretical terms crucial to the exposition. I found typos on the following pages: pp. 2; 35 (example 19: should be ‘construyó’); 49 (repeated line: see p. 48 bottom); 57; 118; 131; 157 (omit ‘that’); 175; 184 (the date for Hopper and Thompson’s paper should be 1980).

How useful is this book to the field linguist? Mostly this depends on the linguist’s theoretical leanings. The authors’ work appears to be most closely aligned to LFG theoretical approaches, but note Miriam Butt’s comment (*Theories of Case*, p. 138, emphasis mine): “Ackerman and Moore (2001) incorporate Proto-Role properties into the selection of arguments without making explicit reference to LFG’s standard linking theory, *though they assume their ideas are*

compatible with it.”⁸ Although A & M never clearly specify the more general theoretical framework in which they are operating, in a footnote (p. 137) they offer the hope that their work will be useful in a variety of approaches. Linguists who prefer to account for case marking and predicate relations using a syntactic approach will not find the analysis attractive, and in fact might react negatively to lexical specifications such as the example on p. 165. Linguists struggling with languages where semantics drives case marking and predicate relations (such as semantically aligned languages—see authors’ comment on p. 173) will see the proposals as stimulating, hopefully leading to a more fruitful approach in their own research.

Notes

- 1 See SIL Electronic Book Review 2007-004 (*Theories of Case*, reviewed by Lou Hohulin) and SIL Electronic Book Review 2008-005 (*Argument Realization*, reviewed by Eric M. Jackson).
- 2 The date for this article in the bibliography of the book under review (p. 184, top of page) is not correct.
- 3 The following example appears on p. 84 of A & M (their example 1).
- 4 The following example appears on p. 100 of A & M (their example 29).
- 5 As far as I can tell, A & M assume that they are following Dowty’s definition of INCREMENTAL THEME.
- 6 There does not seem to be one overarching theory of aspect accepted in the field, even at the time of writing this review—never mind at the time A & M did their research. Beth Levin and Malka Rappaport Hovav note that incremental theme is “the most controversial of the Patient Proto-role entailments” (*Argument Realization*, p. 62); the in-flux state of current theories of aspect likely has something to do with this as well. A & M have some discussion of the different approaches in two footnotes on p. 137; I was surprised to see issues so crucial to their novel proposal relegated to a footnote.
- 7 The following example appears on p. 154 of A & M (their examples 20 and 21, respectively).
- 8 Again, the authors touch on these issues in a footnote (51, on p. 137).

References

- Dowty, David. 1991. Thematic roles and argument selection. *Language* 67:547-619.
- Fillmore, Charles. 1968. The case for case. *Universals in linguistic theory*, eds. E. Bach and R. Harms, 1-88. New York: Holt, Rinehart, and Winston.
- Hopper, Paul J., and Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56:251-299.