Argument realization

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Introduction

One of the most basic topics in the description of a language is how a verb or other predicate-forming element and its arguments fit together to make a clause. Some verbs may be simple to describe; their arguments may be expressed in only one way. Other verbs may be more complex, occurring in a range of clause types and able to express their arguments in diverse ways, even when describing the same scene. Consider the example sentences below involving the English verbs break and hit.

(1a) John broke the window with a rock.
(1b) John broke the window.
(1c) A rock broke the window.
(1d) The window broke.
(1e) The window was broken. (eventive and stative readings available)
(1f) I broke his leg.
(1g) * I broke him on the leg.
(1h) John broke the rock against the window. (does not paraphrase (1a))

(2a) John hit the fence with a stick.
(2b) John hit the fence.
(2c) A stick hit the fence.
(2d) * The fence hit.
(2e) The fence was hit. (only eventive reading available)
(2f) I hit his leg.
(2g) I hit him on the leg.
(2h) John hit the stick against the fence. (paraphrases (2a))

(Fillmore 1970, taken from Levin and Rappaport Hovav 2005)

Both of these verbs can be used in a particular frame with two arguments (e.g. (1b) and (2b)), in which each verb's two arguments would be considered to have the semantic roles agent and
patient—and yet, merely categorizing break and hit as "agent-patient verbs" is not an adequate description, since overall they show a divergent pattern of argument realization possibilities. Their arguments can be put together with the verbs in different ways to make different kinds of clauses.

If the range of argument alternations that a verb participated in was completely unsystematic, then this kind of information would simply need to be listed for each verb as part of a complete description of the language. Strikingly, this is not the case. The verbs break and hit each represent a class of English verbs that participate in the same range of alternations; break patterns like bend, fold, shatter, and crack, while hit patterns like slap, strike, bump, and stroke. Other classes of verbs in English can be picked out based on participation in alternations like those illustrated above, and although this definition of verb classes is in terms of grammatical properties—participation or non-participation in an alternation—the verbs in each class also appear to share elements of meaning: verbs in the break class involve a change of state, while verbs in the hit class involve surface contact without a necessary change of state (Levin 1993). If a verb's meaning is what determines the syntactic realization of its arguments or available semantic interpretation in examples like those above, other questions follow: Which elements of these verbs' meanings determine this behavior, and how do different elements of meaning interact? Precisely how do these elements of meaning result in properties that are expressed syntactically?

The last four decades of linguistic research have seen much progress in answering these and related questions. While most who have participated in this discussion have had the goal of improving the structure of linguistic theory, their answers are highly relevant also to descriptive linguists and lexicographers; likewise, descriptive linguists and lexicographers can contribute valuable additional information to improve our understanding of argument realization. Beth Levin and Malka Rappaport Hovav, in their book Argument realization, present the historical development and current state of research on these issues, including the work of linguists writing from widely different theoretical perspectives. In fact, it is because many linguists have explored these questions from different theoretical perspectives and from within different domains of linguistics that Levin and Rappaport Hovav see great value in this kind of synthesis of work on argument realization. As they put it, "Our goal is not to develop a comprehensive theory, but rather to present research results which must be taken into consideration within any theoretical framework" (Levin and Rappaport Hovav 2005:4).

Structure of the book

This book is composed of an introduction which lays out the major questions regarding argument realization: Which elements of meaning are relevant for the mapping from lexical semantics to morphosyntactic expression? What should lexical semantic representations be like in order to encode this information? How is the mapping from lexical semantics to syntax carried out? What effect do factors apart from the semantics of the verb, like semantic weight of an argument (i.e., its grammatical complexity), or information structure and discourse context, have on the realization of a predicate and its arguments? To what extent are semantic determinants of argument structure "lexical", and to what extent not?
The first chapter of the book lays out the difficult aspects of argument realization, based on descriptive generalizations that have come out of research in this area. In this context, the authors also point out the shortcomings of some proposed theories of argument realization, as well as errors that have arisen in the four decades of this research, such as attributing the semantic basis for an alternation to a co-occurring, but incorrect, property.

The second, third, and fourth chapters examine issues of lexical semantic representation: what elements of verb meaning are relevant for an accurate theory of argument realization, and how should they be represented? Chapter Two looks in detail at semantic roles and semantic role lists and the major problems that they face. For instance, semantic roles seem to be too coarse for distinguishing the argument realization possibilities of some verbs (such as hit and break above), but too fine-grained to capture some generalizations that apply to multiple semantic roles.

Chapter Three focuses on two subsequent approaches replacing semantic role lists: generalized semantic roles and predicate decomposition. To address the granularity problem of semantic roles mentioned above, some linguists have replaced the many traditional semantic roles with a small set of generalized semantic roles. Each generalized semantic role (in some theories, only AGENT and PATIENT) is characterized by a small number of semantic properties, and each of the verb's arguments are evaluated against these properties; the argument which satisfies the greatest number of agent-like properties is assigned that role, while the argument which satisfies the greatest number of patient-like properties is assigned that role. Predicate decomposition, on the other hand, postulates that verb meanings are divisible into one or more primitive predicates—elements with names like CAUSE, BECOME, and DO—and that argument realization properties of verbs are due in part to generalizations that hold of these primitive predicates. These two approaches are not mutually exclusive, but what emerges from the discussion of their strengths and weaknesses in accounting for argument realization is the importance of certain characteristics of the events that verbs describe, sometimes called event type or event structure.

Following up on the importance of event structure, Chapter Four examines three approaches to conceptualizing events—defining what constitutes an event in the linguistic sense, and what sort of semantic structure should be represented for the verb that is predicated of it. What Levin and Rappaport Hovav refer to as the "localist" approach takes location and spatial properties of events as central, and analyzes non-locative or non-spatial events in terms of a spatial metaphor. The "aspectual" approach, on the other hand, analyzes events in terms of their internal temporal properties: stative (entailing no action and no change) or non-stative, telic (having a distinct endpoint) or atelic. In this context, the authors also discuss the concept of INCREMENTAL THEME, an argument which "measures out" the progress of the event. Lastly, the "causal" approach analyzes events in terms of causal relations and causal chains. Synthesizing this work, Levin and Rappaport Hovav note that in addition to causal and aspectual notions, event complexity and animacy, sentience, and volitionality are also relevant for argument realization.

The next three chapters examine other issues regarding the realization of arguments: given what has been learned about lexical semantic representations and grammatically-relevant elements of meaning, how is the realization of arguments actually carried out within a theory and the observed range of data to be explained? Chapter Five focuses on proposals for the mapping from lexical semantics to syntax, examining how semantic properties of arguments and the events that
their referents participate in are given morphosyntactic expression. Chapter Six looks at the thematic hierarchy, a hierarchy of semantic roles that has been proposed to account for generalizations regarding argument realization. The authors discuss the multiple thematic hierarchies to be found in linguistic literature and conclude that although these may not find a formal place in the theoretical apparatus of argument realization, they are a valuable means of stating generalizations for specific contexts. Finally, Chapter Seven turns to accounts of multiple argument realization—the property, shared by *hit* and *break* as well as many other verbs, of being able to occur in more than one syntactic context. While many instances of multiple argument realization may result from meaning differences that are associated with each variant, Levin and Rappaport Hovav conclude that some alternations appear not to be meaning-driven. In these cases, what they call "non-semantic factors"—factors apart from the meaning of the verb and its arguments, such as how a syntactic frame presents information in the discourse context, or how grammatically complex elements in a clause preferentially occur at the end of the clause—may influence the choice of argument realization options.

The eighth and final chapter of the book summarizes the detailed discussion that preceded it, making explicit how each line of research and any consensus that has emerged address the questions regarding argument realization that were posed in the Introduction. In this final section, the authors stress a number of observations made at the end of Chapter Seven, namely that while many argument realization options can be traced back to properties of event structure—those properties which unite the verbs in the *hit*-class and distinguish them from the verbs in the *break*-class—there are facets of argument alternations that depend on the meaning of verb ROOTS, the part of the meaning of a verb that makes the members of the same class, such as *hit*, *slap*, *strike*, *bump*, and *stroke*, different from each other. Compared to the other aspects of verb meaning surveyed in this book, the semantics of verb roots are not well studied, and Levin and Rappaport Hovav observe that this is an area which may benefit greatly from cross-linguistic comparison.

**Evaluation**

This synthesis of work on argument realization gives a balanced view of the field in many ways. Although both Beth Levin and Malka Rappaport Hovav have contributed significantly on their own to research on argument realization for more than twenty years, the authors do not overemphasize their own work at the expense of other important work on argument realization. They present important results from linguists working in nearly every framework, from Minimalism to Role and Reference Grammar, Projectionism and Constructionism, and even cognitive and functional linguistics. They acknowledge where linguists have different viewpoints about the issues under discussion, and the authors evaluate the strengths and weaknesses of each proposal impartially; they point out where consensus has not been reached, or where the relevant evidence is unclear. Their aim is to make points that are not tied to a particular theory, and to bring up issues and data that any theory must account for and explain.

The discussion in the book is presented at a very high level, and readers who are not already familiar with the concepts that have emerged in the study of argument realization may have a difficult time following some of the discussion. The authors consistently cite original literature, however, and dedicated readers can easily go back to the original sources for a fuller
understanding of a proposal or discussion that is difficult to grasp from this book alone. Approaching these topics through this book, however, provides readers with a much clearer idea of the larger context in which the original papers were written— which issues linguists at the time were dealing with, and how each paper fits into the shaping of theory that was taking place at the time, something which is not always clear from reading only one or two original sources.

This kind of technical linguistic discussion may be unappealing or intimidating to many descriptive linguists, but in fact, descriptive linguists stand in a good place both to benefit from the theoretical insights presented in this book and to contribute to further theoretical work. For instance, a description in a grammar or dictionary of the predicate-forming elements of a language would not be complete or accurate without describing the range of morphosyntactic contexts in which those predicates occur. Moreover, a dictionary that hopes to capture the meaning of predicate-forming elements would be lacking crucial information for both first-language and second-language users if it failed to reflect those elements of meaning that are relevant for morphosyntactic expression of arguments. As Levin and Rappaport Hovav demonstrate through this survey, describing the facets of meaning for a predicate that are relevant for argument realization goes hand in hand with describing the range of morphosyntactic contexts that that predicate may occur in. How better to prepare to accomplish this for a new language than to follow a detailed discussion of how this kind of description has been worked out for well-known languages.

Although the range and composition of verb classes picked out by argument alternations has been described in detail for English (in Levin 1993, for example), and though particular verb classes have been well described for a small number of languages, little has been written about these sorts of verb classes in most other languages. Existing dictionaries typically include some but not all of the information that is relevant for completely describing the argument realization options available to a predicate, and many languages lack any statement of the types and distribution of verb roots which occur in that language. Because of this, many questions about the range of verb meanings and argument structure alternations across languages, and about how these differences correlate with other facets of language structure, simply cannot be answered yet. By following the development of the field through this book, descriptive linguists will learn which elements of argument alternations have caused problems for accurate description in the past, and which facets of their own language of study are completely typical or completely atypical, and worth sharing with the linguistics community and the world.

References

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