Argument Structure Jane Grimshaw

The MIT Press
Cambridge, Massachusetts
London, England

Second printing, 1991

This book was set in Times Roman by Asco Trade Typesetting Ltd., Hong Kong, and printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Grimshaw, Jane B. (Jane Barbara), 1951–
Argument structure/Jane Grimshaw.

p. cm.—(Linguistic inquiry monographs; 18)
Includes bibliographical references.
ISBN 0-262-07125-8
1. Grammar, Comparative and general—Syntax. 2. Semantics.
I. Title. II. Series.
P295.G68 1990
415—dc20 89-13972
CIP

Argument Structure

Linguistic Inquiry Monographs
Samuel Jay Keyser, general editor

1. *Word Formation in Generative Grammar*
   Mark Aronoff
2. *$\bar{X}$ Syntax: A Study of Phrase Structure*
   Ray Jackendoff
3. *Recent Transformational Studies in European Languages*
   Samuel Jay Keyser, editor
4. *Studies in Abstract Phonology*
   Edmund Gussmann
5. *An Encyclopedia of AUX: A Study in Cross-Linguistic Equivalence*
   Susan Steele
6. *Some Concepts and Consequences of the Theory of Government and Binding*
   Noam Chomsky
7. *The Syntax of Words*
   Elisabeth Selkirk
8. *Syllable Structure and Stress in Spanish: A Nonlinear Analysis*
   James W. Harris
9. *CV Phonology: A Generative Theory of the Syllable*
   George N. Clements and Samuel Jay Keyser
10. *On the Nature of Grammatical Relations*
    Alec Marantz
11. *A Grammar of Anaphora*
    Joseph Aoun
12. *Logical Form: Its Structure and Function*
    Robert May
13. *Barriers*
    Noam Chomsky
14. *On the Definition of Word*
    Anna-Maria Di Sciullo and Edwin Williams
15. *Japanese Tone Structure*
    Janet Pierrehumbert and Mary Beckman
16. *Relativized Minimality*
    Luigi Rizzi
17. *Types of $\bar{A}$-Dependencies*
    Guglielmo Cinque
18. *Argument Structure*
    Jane Grimshaw

Acknowledgments

The research discussed here was conducted with the support of grants IST-8420073 and IRI-8808286 to Brandeis University. For one year, when I was supposed to be finishing this book, I enjoyed the hospitality of the MIT Center for Cognitive Science.

Parts of this work have been in existence for a while under various guises, and many people have commented on these earlier versions, contributing important suggestions or clarifications. They include Mark Baker, Robert Beard, Adriana Belletti, Luigi Burzio, Noam Chomsky, Martin Everaert, Lyn Frazier, Isabelle Haïk, Lars Hellan, Ray Jackendoff, Alana Johns, Richard Kayne, Beth Levin, Joan Maling, Alec Marantz, Armin Mester, David Pesetsky, Steven Pinker, Alan Prince, James Pustejovsky, Malka Rappaport, Eduardo Raposo, Ian Roberts, Tom Roeper, Sara Rosen, Carol Tenny, Esther Torrego, Sten Vikner, Edwin Williams, Ellen Woolford, and Maria-Luisa Zubizarreta.

While working on this monograph, I have had many extensive discussions of the material with Steven Pinker, Edwin Williams, Beth Levin, Alan Prince, and Maria Luisa Zubizarreta. The final product reflects their benign influence in numerous respects.

Detailed comments on the manuscript or on various components thereof were kindly provided by Mark Baker, Piero Bottari, Martin Everaert, Guglielmo Cinque, Norbert Hornstein, and Beth Levin. Where I have not been able to act upon their suggestions the book is doubtless the worse for it.

Parts of this work were presented at various times at the University of Connecticut, Yale University, the West Coast Conference on Formal Linguistics at the University of Washington, the University of North Carolina, the Amsterdam Workshop on Syntactic and Lexical Structure, the NYU Conference on Alternative Conceptions of Phrase Structure, McGill University, the University of Quebec at Montreal, the

University of Maryland, Princeton University, MIT, and the University of Massachusetts at Amherst. Audiences at all of these places made valuable suggestions that have found their place, though perhaps not always their rightful place, in the final version.

Those attending the Topics in Syntax course at Brandeis last spring provided vigorous and spirited discussion of much of the material in this book. I thank in particular John Aberdeen, Claudia Borgonoro, Piroska Csuri, Sumana Dixit, Kevin Hegg, Arild Hestvik, Mark Hewitt, Soo Won Kim, Henrietta Hung, Gyanam Mahajan, Sara Rosen, Dan Silverman, and Saeko Urushibara. Finally, special thanks to Claudia Borgonoro for last minute assistance with the manuscript.

Argument Structure

Contents

Chapter 1

Principles of Argument-Structure Representation

Only ten years ago argument structure was equated with the number of arguments related by predicate, a construct of some use but of limited interest. With the increasingly important role played by principles such as the Theta Criterion and the Projection Principle in Government-Binding Theory, beginning with Chomsky (1981), and with the development of lexicalist theories like Lexical Functional Grammar (Bresnan (1982c)), a new view has emerged in which argument structure represents a complex of information critical to the syntactic behavior of a lexical item. Recent work has used argument structure theory to explain properties of adjectival and verbal passives, middles, light verb constructions, verbal compounds, causatives, and nominals, among many other topics (Levin and Rappaport (1986, 1988), Zubizarreta (1985, 1987), Grimshaw (1986b), Hale and Keyser (1986a, 1986b, 1988), di Sciullo and Williams (1987), Grimshaw and Mester (1988), Li (1990)).

This monograph is a study of the representation of argument structure (a-structure). The term refers to the lexical representation of grammatical information about a predicate. The a-structure of a lexical item is thus part of its lexical entry. Argument structure interfaces with two other kinds of representation. One is lexical semantic structure, which represents lexical meaning. Hale and Keyser (1986a, 1986b, 1988), Jackendoff (1983, 1987, 1990), Rappaport and Levin (1986), and Zubizarreta (1985, 1987) posit lexical conceptual structure or lexical semantic representation. The second representation which a-structure interfaces with is deep structure (d-structure). Argument structure is projected from lexical semantic structure, and d-structure is projected from argument structure and principles of X-bar theory. In the strongest possible theory the a-structure of a lexical item is predictable from its meaning, and the d-structure the item appears in is predictable from its a-structure in interaction with independent parametric characteristics of

the language. The theory of a-structure is the theory of how this is achieved, and a core component of this is the primary concern of the present study: the nature and internal organization of a-structure representation itself.

Out of the earlier work cited has emerged a more or less standard view of argument structure as consisting of a *set* of arguments represented either by theta role labels (Williams (1981a), Marantz (1984), di Sciullo and Williams (1987), Belletti and Rizzi (1988)) or by variables over arguments (Levin and Rappaport (1986), Rappaport and Levin (1986), Zubizarrreta (1987)). Further information about the status of these arguments is required for their correct deployment; it is necessary, for example, to represent the external/internal argument distinction, first introduced in Williams (1981a). To encode such additional properties of arguments, various word-processing resources are employed.

Williams (1981a) and much subsequent work uses underlining to pick out the "external" argument. Other notational systems use angled backets around the internal arguments to identify the external. These are equivalent means of expressing the distinction and are equivalent in turn to, say, capitalizing the external argument. Some systems also designate the "direct argument," an argument which receives its theta role directly from the verb (Marantz (1984), Levin and Rappaport (1986)).

Representative argument structures drawn from these works are given in (1) through (5):

(1) see(A, Th) (di Sciullo and Williams (1987, 29))

(2) give(*theme*, goal)
put(*theme*, location)
steal(*theme*, source) (Marantz (1984, 18))

(3) temere 'fear' [*Experiencer*, Theme]
preoccupare 'worry' [Experiencer, Theme]
piacere 'please' [Experiencer, Theme]
(Belletti and Rizzi (1988, 344))

(4) put: x <y, P-loc z> (Rappaport and Levin (1986, 9))

(5) work, x
arrive^y
hit^y,
put^y, x; Loc P^z (Zubizarreta (1987, 8–9))

In these analyses the argument structure of a predicate is a *set* of elements, with the external or internal status of an argument indicated by

various notational devices. These make it possible to recognize the asymmetry between internal arguments, which are within the scope of the predicate in some sense (Zubizarreta 1987, to appear), and external arguments, which are not.

This monograph explores a view of a rather different kind: the hypothesis that argument structure is a structured representation over which relations of prominence are defined. An early version of this idea is presented in Grimshaw (1987) and Grimshaw and Mester (1988). It is really a development of the proposal for Warlpiri in Hale (1983), in which the external agrument is in effect higher in the argument structure than internal agruments and counts as asymmetrically c-commanding internal arguments for purposes of the Binding Theory.

The *prominence theory* of a-structure contrasts in a number of respects with the view that a-structures are sets. The fundamental assumption is that the a-structure of a predicate has its own internal structure, which affects the grammatical behavior of the predicate in many ways. The organization of the a-structure for a predicate is taken to be a reflection of its lexical semantics, so that the a-structure of a predicate should be derivable from key characteristics of its meaning. As a consequence of this, a-structure cannot be freely altered by rules, since an argument has whatever a-structure properties it has by virtue of its role in the lexical meaning of the predicate and not by stipulation. Finally, the prominence theory gives an organic characterization of some of the properties of arguments that are otherwise represented by unexplained diacritics. The prime example is the concept of an external argument, which has a natural definition in a theory of structured argument structure, as the most prominent argument.

The fundamental goal of this enterprise is to derive a-structure from semantics and then to derive the lexical behavior of a predicate and its d-structure from its argument structure representation. Current research on the acquisition of lexical items make it clear that the same issues of learnability arise with respect to the lexicon as elsewhere (Landau and Gleitman (1985), Pinker 1989)). The position taken in much earlier work, that the lexicon is idiosyncratic and is acquired piece by piece, simply cannot be maintained. It fails to explain the high degree of regularity of the lexical system as well as how children come to acquire lexical information.

Despite its commitment to deriving a syntactic representation (a-structure) from properties of a semantic representation, this is not a reductionist program. It is the syntactic representation of a predicate

that determines its *syntactic* behavior; the syntactic properties of predicates are not reduced to their semantics. For example, I argue that the restrictions on passivization follow from the formal character of passivization interacting with the a-structure properties of particular lexical items; passivization affects an external argument. A verb with no external argument will not passivize. The fact that whether a verb has an external argument or not is predictable does not mean that we can or should dispense with a-structure representation altogether. It is only by positing a-structure that we can *explain* the limits on passivizability, for example. (See Pinker (1989) for a recent discussion of learning issues here.)

The basic assumptions of the theory are the following.

1 A-structure is a structured representation which represents prominence relations among arguments. The prominence relations are jointly determined by the thematic properties of the predicate (via the thematic hierarchy) and by the aspectual properties of the predicate. I will represent the structure using parentheses. For a verb like *announce*, with an external Agent and an internal Theme and Goal, the a-structure prominence relations are those indicated in (6). Here the Agent is more prominent than the other arguments, which are more deeply embedded in the representation. Other arguments also bear relations of relative prominence to each other; the Goal is more prominent than the Theme, for example.

(6) *announce*(Agent (Goal (Theme)))

Although this asymmetry has no official status in most earlier theories, it is implicit in the tradition of listing the Agent before the Theme in a-structure.

The general idea that a-structure is a structured representation has major ramifications extending throughout the material to be presented in this monograph. It figures centrally in the theory of external arguments and in the characterization of long-distance anaphora. The structure of a-structure also governs theta-marking in compounds and in the light verb construction analyzed in Grimshaw and Mester (1988).

2 As in earlier research, especially that of Rappaport and Levin (1986) and Zubizarreta (1987), theta-role labels are not present in a-structure, hence operations defined over a-structure must be blind to thematic roles and depend solely on the formal characteristics of a-structure it-

self. However, the prominence theory differs from earlier views in that the internal organization of the a-structure results (in part) from the thematic hierarchy, so the prominence relations reflect thematic information of a very limited kind, namely whether a given argument is higher or lower on the thematic hierarchy than another. Some apparently thematically governed restrictions, such as those affecting experiencer predicates, will be shown to follow from the principles of a-structure without explicit reference to the thematic roles involved.

3 The concept of an external argument can be explicated in terms of a-structure prominence. The external argument is the most prominent argument in the a-structure of a predicate. In fact, it must be the most prominent along two dimensions: thematic and aspectual. Thus an argument is external or internal by virtue of its intrinsic relations to other arguments. Its status cannot be changed except by the introduction of another argument. This gives an argument structure theoretic definition of external arguments, one that turns out not to be equivalent to the notion of a d-structure subject.

4 I distinguish between grammatical arguments and semantic participants. Not all semantically relational lexical items have a syntactic a-structure and take syntactic arguments. I will argue that only nouns that refer to what I call complex events—nouns that have an internal aspectual analysis—have a-structure. Hence, only they have obligatory grammatical arguments of the kind that verbs have. Each verb and noun has a lexico-semantic representation (a lexical conceptual structure or lcs) that includes, among other things, the participants in the activities or states described by the verb (see Jackendoff (1987, 1990), Levin and Rappaport (1986), Hale and Keyser (1986a, 1986b), Zubizarreta (1987)). Some of these participants are realized as grammatical arguments and projected into an a-structure representation. However, the ability to project arguments in this way is limited among nouns to a subclass that I will refer to as *process* or *event nominals*. Other nouns do not have a-structure as part of their lexical representation, even though they may very well have semantic arguments appearing in their lcs definitions. I will argue that gerunds always have a-structure and that derived nominals are typically ambiguous in this respect. The distinction between the two kinds of nominals can be shown to correlate with a large number of other grammatical differences, which can be unified

by the hypothesis that the two kinds of nouns have different external arguments.

This veiw distinguishes sharply between nouns that are in a sense semantically relational and nouns that are syntactically relational in that they admit grammatical arguments, and equally sharply between the *semantic* representation of arguments in lcs and their *syntactic* representation in a-structure. An a-structure is a lexico-syntactic representation assembled from a set of elements identified by the lcs of the predicate.

5 The argument structure and theta-marking properties of lexical items vary across syntactic categories. I will first argue that nouns, even though they have argument structure if they are of the right semantic kind, never theta-mark directly but only via prepositions. The evidence for this is that nouns never take bare arguments, even when the arguments do not require case. Hence, nouns never have sentential arguments, for example. I will suggest that this is because nouns are not governors, and government is required for theta-marking. Second, I will show that the argument structure of nouns and passive verbs are different from that of active verbs. In nominalization and passivization the external argument of a predicate undergoes suppression, and suppressed positions cannot be satisfied by syntactic arguments, although they can license *argument adjuncts*. This explains many properties of passives and nominals: the distribution of *by* phrases and possessives, the absence of passivization and nominalization of certain verb classes, and the behavior of passives and nominals with respect to control, for example.

The data for this study comes primarily from compounds, verb classes (including the psychological predicates), verbal and adjectival passives, and nominals.