Linguistic Inquiry
Monograph Ten

On the Nature of Grammatical Relations

Alec P. Marantz

ON THE NATURE OF GRAMMATICAL RELATIONS

Alec Marantz

The MIT Press
Cambridge, Massachusetts
London, England

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This book was set in VIP Times Roman by Village Typographers, Inc., using disks prepared by the author on an Apple III computer, and printed and bound by Halliday Lithograph Corporation in the United States of America.

Library of Congress Cataloging in Publication Data

Marantz, Alec.
On the nature of grammatical relations.
(Linguistic inquiry monographs; 10)
Revision of thesis (Ph.D.)—MIT, 1981.
Includes bibliography and index.
1. Grammar, Comparative and general. I. Title.
II. Series.
P151.M3 1984 415 83-43018
ISBN 0-262-13193-5
ISBN 0-262-63090-7 (pbk.)

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Series Foreword

We are pleased to present this monograph as the tenth in the series *Linguistic Inquiry Monographs*. These monographs will present new and original research beyond the scope of the article, and we hope they will benefit our field by bringing to it perspectives that will stimulate further research and insight.

Originally published in limited edition, the *Linguistic Inquiry Monograph* series is now available on a much wider scale. This change is due to the great interest engendered by the series and the needs of a growing readership. The editors wish to thank the readers for their support and welcome suggestions about future directions the series might take.

Samuel Jay Keyser
for the Editorial Board

Preface

This book is a heavily revised version of my 1981 MIT doctoral dissertation. Although the topics discussed and the order of their presentation remain almost unchanged from the earlier work, substantial improvements have been made throughout. Chapter 3, including my analysis of raising and Move Alpha constructions, is entirely new, as are sections 7.3 and 7.4. The details of morphological merger in chapter 7 differ conceptually and technically from the earlier version. The material in chapters 4 and 5 is basically unmodified, as is most of chapter 6, with the exception of the analysis of Dyirbal dative shift.

In the two years it took to get things straight, I had the assistance of numerous individuals and audiences. Noam Chomsky, my thesis adviser, read everything in countless versions and insisted I get it right. But my debt does not end there: more by example than instruction, Noam showed me how to do linguistics. To single out some individuals who provided particular help with the manuscript, I would like to thank Paul Kiparsky, Ken Hale, Marion Johnson, R. M. W. Dixon, Tony Woodbury, Lori Levin, K. P. Mohanan, Joan Bresnan, Mamoru Saito, Barry Schein, Malka Rappaport, Jeremy Benstein, D.-W. Yang, Paula Pranka, Richard Sproat, Richie Kayne, and Kasuko Inoue and her students. Providing challenging questions and insightful (even devastating) criticism at presentations of material from this book were audiences at MIT, Harvard, the University of Texas at Austin, UCLA, UC Irvine, Tsukuba University, and ICU in Tokyo. For assorted support and encouragement I thank the organizers of the San Francisco marathon, Jay Keyser and the MIT Linguistics Department, Bruce Katz at MIT Press, the Harvard University Society of Fellows—especially my fellow Junior Fellows, and, in position of utmost emphasis, my parents.

Contents

Preface xi

Chapter 1
The Nature of Grammatical Relations 1

Chapter 2
Levels of Syntactic Analysis 13

2.1
Logico-Semantic (l-s) Structure 14

2.2
Syntactic Structure 46

2.3
Surface Structure 69

Chapter 3
Bearing Multiple Relations 91

3.1
Raising 92

3.2
Null Constituents 108

3.3
The Move Alpha Relation Between Projected Positions 115

Chapter 4
Affix-Mediated Alternations in the Expression of Arguments I 121

4.1
Passivization 126

4.2
Antipassivization 149

4.3
Lexical Reflexivization 152

Chapter 5
Alternations in the Expression of Arguments Not Mediated by Affixation 166

5.1
Alternations in Semantic Role Assigning Properties: Dative Shift 167

5.2
Alternations in Argument Structures 179

Chapter 6
The Ergative Parameter 196

6.1
Passive in Ergative Languages 200

6.2
Dative Shift in Ergative Languages 203

6.3
Lexical Reflexives in Ergative Languages 211

6.4
Unmarked Intransitive Forms of Eskimo Transitive Verbs 218

6.5
On the Scarcity of Ergative Languages 220

Chapter 7
Affix-Mediated Alternations in the Expression of Arguments II: Morphological Merger 222

7.1
Applied Verbs 231

7.2
Causative Constructions 261

7.3
Merger at Surface Structure 286

7.4
Potential Extensions of Morphological Merger 290

Chapter 8
Theories of Grammatical Relations 292

8.1
Theories with Projection Principles 293

8.2
Alternate Theories of Grammatical Relations 304

Notes 313

References 325

Index 335

Chapter 1

The Nature of Grammatical Relations

This book explores the nature of grammatical relations. In the linguistic literature, one finds a great deal of confusion over what an account of grammatical relations should be. Some theorists believe that what is required is a definition of grammatical relations in terms of other concepts of syntactic theory. Other linguists try to prove that grammatical relations are primitives, that is, not definable within linguistic theory. Most linguists who take either of these views share the assumption that it is reasonable to ask, "Are grammatical relations such as subject and object definable?" This assumption is based on the belief that grammatical relational terms have clear referents outside particular syntactic theories. The only way to test a particular definition of "subject" is to have some notion of "subject" with which to compare the implications of the definition.

In fact linguists lack any grounds for assuming that the definability of grammatical relations is a coherent issue. Although they operate with concepts, varying in clarity, that relate to grammatical relations, there is no firm ground to stand on in evaluating accounts of grammatical relations per se. Linguists have fairly clear theory-neutral notions of "antecedent of a reflexive," "case marking," "word order," "agent of an action," and other concepts that seem related to the notion of "subject." But "subject" itself does not fall into this class of theory-neutral concepts. How then may one propose to evaluate an account of grammatical relations or a definition of subject or object?

In practice, theories of grammatical relations are criticized in two ways. First, it is pointed out that the definition or account of, say, "subject" in a theory does not in fact apply to something identified as a subject in some other theory or according to someone's intuitive notion of what a subject is. This criticism is only partially coherent. Linguists

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who use it seem caught up with the notion that because they talk about subjects, there must be some class of subjects out there, a class that at least includes what they consider to be canonical subjects. Nevertheless, the philosophical considerations of Wittgenstein (1958) and the psychological findings of Eleanor Rosch and associates (see the references in Smith and Medin 1981) warn against assuming that words pick out clear classes of entities or have reductive definitions. What makes linguists think that their notion of "subject" is any different from that of "chair" or "game"? If they cannot provide a definition or account of "game" that picks out all and only the entities considered to be games, they should not expect to discover a definition of "subject" that accounts for their intuitive concept of "subject." Moreover, why should a term in a theory have to pick out just those constituents one believes to be subjects? An account of one's knowledge of grammar does not necessarily include an account of one's use of grammatical vocabulary. The study of "subject," "object," and "grammatical relation" as concepts and words that linguists and others use to talk about language should be reserved for those investigating word meanings and concepts in general. Such an investigation falls outside the syntactician's responsibility.

A second criticism leveled at accounts of grammatical relations is that a theory in question does not account for the same range of data that some other theory of grammatical relations handles. This criticism is valid if taken broadly. If a theory of grammatical relations is embedded in an inadequate syntactic theory, then one has reason to criticize that theory. However, the so-called data brought up in disputes over grammatical relations are often theory-internal generalizations about the grammatical relational terms in a particular theoretical framework. That, for example, "only subjects undergo syntactic raising" is not a simple fact that every syntactic theory must capture. Rather, it represents a network of connections among pieces of data. These connections are what competing theories are responsible for, not a generalization about "subjects."

Although grammatical relational terms do not designate unique referents outside particular theories, linguists writing about grammatical relations do tend to discuss a similar range of phenomena. There is enough agreement about the sort of data associated with grammatical relations that the subject matter of this book should be fairly clear from the title. Nevertheless, it will not be a valid criticism of my work that I have failed to capture someone's intuitive notion of grammatical rela-

tions. Although it is a challenge to the theory I develop here to capture all the significant generalizations accounted for by other theories of grammatical relations, it is clearly not necessary that the generalizations be captured in the same way. For example, if some rule of, say, Relational Grammar attributes a set of data to a condition on subjects whereas the present theory accounts for the same data without reference to grammatical relations at all, this does not count a priori against the present theory. Or if some construction some linguist calls a "passive" for taxonomic reasons does not fall under the definition of "passive" in the present theory, nothing should hinge on this fact. There can be no right definition of "subject" or "passive," only a correct (or better) syntactic theory.

Grammatical relations of some sort appear in virtually every grammatical theory from Pāṇini to the present. Within a grammar they are intimately connected with thematic or semantic roles such as agent or theme on the one hand, and with cases and structural relations such as nominative or accusative case or "NP immediately dominated by S" on the other. Often linguists define grammatical relations in terms of, or give them up in favor of, semantic or structural relations or morphological case marking. In this work, I develop and support a theory of grammatical relations that places them as intermediaries in the connection between semantic roles and dependencies and the expression of these roles and dependencies in structural and positional relations and in case marking and agreement.

Consider sentence (1.1):

(1.1)
Elmer threw the porcupine to Hortense.

The porcupine appears as the NP immediately dominated by VP ([NP, VP]) because it is the object of the verb, *threw*, and it is the object of the verb because it names the bearer of the "throwee" role in the action described by *threw*. Conversely, because it is the [NP, VP], *the porcupine* is interpreted as the object of *threw*, and because it is the object, it is interpreted as the "throwee." Grammatical relations such as subject and object stand between the semantic roles and relations constituents bear with respect to argument-taking words and phrases and the expressions of these semantic roles and relations in sentences. The diagram in (1.2) represents this central idea, around which the present work is based.

(1.2)

semantic roles and dependencies

↕

grammatical relations

↕

expressions of semantic roles and dependencies

The conception of grammatical relations as mediating the connection between semantic roles and their expression can be found in Pāṇini (see Kiparsky 1981, Kiparsky and Staal 1969, and Shibatani 1977).

Grammatical relations are not objects of study that can be identified outside a particular theory of grammar, and terms like "subject" and "object" have no clear pretheoretical reference. Given the absence of general agreement over what grammatical relations are, one cannot ask such questions as whether rules of verb agreement refer to grammatical relations without specifying some theory of grammatical relations to identify the objects of inquiry. It is widely believed that a crucial question for linguistics is whether grammatical relations are definable or primitive. But because grammatical relations have different characterizations—and grammatical relational terms have different extensions—in different theories, the question of the definability of grammatical relations arises only within particular theories of grammar.

So one may ask whether in theory T the grammatical relational terms are primitive or defined. As Chomsky (1981) points out, this question is of some interest when the theory of grammar is considered to represent the child's innate linguistic knowledge. Whatever the primitives of a linguistic theory qua innate linguistic knowledge are, the child must be able to associate them with the stream of speech that constitutes his linguistic experience. If grammatical relations are primitives in a theory, children must still have some means to pick subjects and objects out of the utterances that confront them. Any theory is suspect that postulates primitive grammatical relations but does not provide a reasonable account of how children manage to learn the extensions of grammatical relational terms.

The definability of grammatical relations within particular theories is thus an important issue from the standpoint of language acquisition. The debate in the literature over whether grammatical relations are primitive covers important issues as well, but they are not in fact issues of definability. When linguists appear to be arguing over whether

grammatical relations are definable or primitive, they are often really arguing over whether the connection between semantic roles or relations and structural positions or case marking is direct or indirect in language. If this connection is direct in a theory, grammatical relations are said (without proper justification) to be defined in the theory because rules that are often believed to refer to grammatical relations (e.g., subject-verb agreement) will refer instead within the theory to groups of constituents classified according to their semantic roles or relations or according to their structural positions or case marking. When the mapping between semantic roles and their expressions is indirect in a theory (i.e., mediated by grammatical relations as shown in (1.2)), the theory's grammatical relations are considered primitive, again without justification.

The issue of whether grammatical relations are defined or primitive is also confused with the issue of how a theory should account for alternations in the expression of a verb's semantic arguments like the passive alternation illustrated in (1.3).

(1.3)
a. Elmer threw the porcupine to Hortense.
b. The porcupine was thrown to Hortense.

It is clear that the "thrown" argument in (1.3a) and (1.3b)—*the porcupine*—is expressed in different structural positions in the two sentences. If a theory accounts for alternations like the passive with a rule that refers only to semantic roles or with a rule that maps phrase markers onto phrase markers, the theory is considered (without proper justification) to have defined grammatical relations in semantic or structural terms. If a theory accounts for the passive alternation with a rule that refers directly to grammatical relations, the grammatical relations in the theory are (perhaps improperly) said to be primitive.

The important problems to be addressed by a theory of grammatical relations include the nature of the connection between semantic roles and relations and their expressions and the proper account of alternations in the expression of semantic roles and relations like the passive alternation illustrated in (1.3). The technical question of whether grammatical relations are defined or primitive arises only within particular theories and is of general interest only in connection with the acquisition problem. In claiming that grammatical relations are primitives within their theory, Relational Grammarians like Perlmutter (see Perlmutter 1983) really mean to emphasize that the association of semantic

roles with their expressions is mediated by grammatical relations in Relational Grammar and that alternations like the passive are handled by rules referring directly to grammatical relations. In fact it is quite likely that the grammatical relations of Relational Grammar may be defined in terms of primitives of the theory (see Marantz 1982b). Nevertheless, in evaluating the merits of Relational Grammar, the crucial consideration is not whether grammatical relations are primitives in the theory but whether the theory provides the best account of the connection between semantic roles and relations and their expressions in the syntax of language.

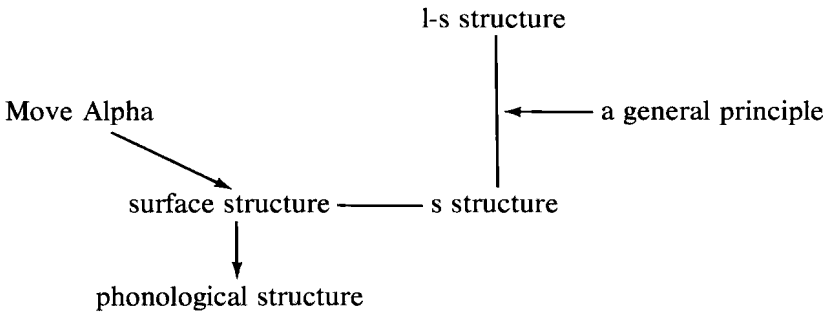
To repeat, a theory of grammatical relations is a theory about the connection between semantic roles and relations and their expressions in sentences. This book presents one such theory and demonstrates its explanatory power; some alternative theories are discussed in chapter 8.

What is the nature of grammatical relations in the theory to be presented? Grammatical relations are the syntactic counterparts—the grammaticalizations, so to speak—of certain logico-semantic relations such as the predicate–subject and modifier–modifiee relations. Associated with each sentence is a "logico-semantic structure" (l-s structure) which displays the logico-semantic relations or interdependencies among the constituents of the sentence. The l-s structure of a sentence is not its semantic representation in the usual sense; it merely represents (a certain set of) the syntactically encoded semantic dependencies among sentential constituents. Logically, it would be possible for languages to connect l-s structures directly to the surface structures of sentences, that is, to express the logico-semantic relations directly in surface structure case marking, structural configurations, and so on. Although a direct mapping between l-s structures and surface structures cannot be ruled out a priori, I claim that a structure called "syntactic structure" similar in form and make-up to l-s structure stands between the l-s structure and surface structure in the analysis of any given sentence. Corresponding to each type of logico-semantic relation and constituent in l-s structure there is a type of grammatical relation and constituent in syntactic structure. Just as the l-s structure of a sentence displays the logico-semantic relations among constituents, so the syntactic structure of a sentence displays the grammatical relations constituents bear with respect to one another.

The model of grammar I adopt in this book is schematized in (1.4). I have drawn (1.4) to emphasize its similarities with the model proposed

in Chomsky 1980b and elaborated in Chomsky 1981. In chapter 8 I discuss a few, but important, differences between the two models.

(1.4)



On the right-hand side of the grammar in (1.4), the logico-semantic (l-s) structure provides a representation of the compositional semantics of a sentence relevant to syntax (excluding quantifier-scope relations). Technically, an l-s structure displays the logico-semantic relations among constituents of a sentence. These include the relation between a predicate and its subject and that between a verb and a constituent for which the verb determines a semantic role in a sentence, that is, to which the verb assigns a semantic role. In (1.1) the verb *threw* determines that *the porcupine* will bear the theme role; in other words, *threw* assigns the theme role to *the porcupine*.

An l-s structure is essentially a list of l-s constituents and the relations that hold between them. Nevertheless, l-s structure may be represented as a constituent structure tree in which only the dominance relations, and not linear order, are significant. In chapter 2 I explain what the theory of syntax gains by including a structural representation of l-s structure in addition to the list of constituents and relations. Each phrasal constituent at l-s structure consists of a logico-semantic operator, like a predicate, and its l-s dependents, like the subject of the predicate. The l-s relations are represented in the tree structure by asymmetrical sisterhood: when A bears an l-s relation with respect to B, A and B are structural sisters but B is singled out as the operator.

The syntactic (s) structure of a sentence displays the grammatical relations among constituents, such as the relation between a verb phrase and its subject or the relation between a verb and its object. Recall that grammatical relations are grammaticalizations of l-s relations. An s structure is also essentially a list of constituents and the relations that hold between them; but an s structure, like an l-s struc-

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