

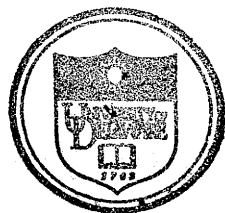
# Theta Theory

*by*

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## Preface

Well beyond the framework of generative grammar, a central question of linguistic research is whether, or how, certain aspects of meaning influence the form of a sentence. This question is addressed from a lexical perspective in this book. It is assumed that a verb is lexically associated with information that determines, at least in part, the predicate-argument structures it can appear in. The lexical approach raises a set of basic questions. First, there is a *properties problem*: which kind of lexical information enters into the determination of argument structure? Second, there is an *interface problem*: how are the relevant chunks of information encoded, such that they are accessible to both general cognition, and the derivation of syntactic predicate-argument structures? Third, there is a *mapping problem*: how exactly are lexical-semantic properties translated into grammatical functions?

The first two questions are addressed in chapter one, which concludes with an introduction to the *Theta System* of Reinhart (2000) and subsequent work. Rather than decomposing verb-meanings into complex lexical event structures, the Theta System analyses thematic roles like *Agent*, *Theme*, *Experiencer* into clusters of two binary features, which are labeled *c* (for *cause change*) and *m* (for *mental contribution*). Chapter one explores the psychological basis of these features and identifies them as expressing agency in two domains of a modular mind: a *commonsense theory of body movements (folk physics)*, and a *commonsense theory of mind mechanisms (folk psychology)*. Every verb classifies the participants in the event, state, or process it denotes with respect to the cognitive domain in which it is to be interpreted, and it specifies whether the event participant is an agent or a patient in that domain. The Theta System thus derives exactly eight thematic roles as (possibly underspecified) clusters [*ac*, *βm*].

This notation answers the first two questions posed above, the *properties problem*, and the *interface problem*. The grammatically relevant property of verb meaning is agency in two crucial domains of cognitive event interpretation, *folk physics* and *folk psychology*. Encoded as clusters of binary features, this information is accessible in grammatical derivations by hypothesis. The third question regarding the mapping of lexical semantic information on syntactic functions is addressed on the basis of German data in chapters two, three and four.

Chapter two lays the empirical basis with a detailed description of a set of German verbs. The chapter first develops the routines that allow us to postulate specific role-clusters for a given verb, and then establishes generalizations about the relation between role configurations and corresponding predicate-argument structures, including diathesis alternations. The overall conclusion is that Reinhart's (2000, 2002) theory is accurate in most cases.

Although the generalizations of the Theta System are robust and most probably universal, they are by no means exhaustive. A number of non-semantic factors enter into the determination of syntactic structures, in particular morpho-phonology, and purely syntactic requirements like structural case. These issues are addressed in chapter three.

Starting with a discussion of morphological conditions on argument structure, the chapter develops a theory of parallel grammatical derivation, in which the notion *interpretation at the interface* is formalized as a homomorphic mapping. Objects of prosodic structure are interpreted by a mapping into syntax, and objects of syntactic structure are interpreted by a mapping into semantics.

The relation between lexicon and grammar is not an interface in this technical sense. It is assumed with Chomsky (1995) that a lexical item enters a grammatical derivation together with all of its features by being selected into an initial array. Empirical problems relating to the mapping of lexical semantic structure into syntactic structure simply do not arise in this theory, because there is no syntactic structure in the lexicon.

Once a lexical item has been selected into an initial array, its features no longer form an un-analyzable unit. Generalizations over argument-linking are formulated in terms of merging instructions for thematic role-clusters. In general, the thematic roles provided by a lexical verb-entry merge with syntactic heads of category  $[-N]$ , and they are assigned to  $[-V]$ . In particular, a  $[+]$  cluster must merge with the head  $v$  (which introduces external arguments), and the fully specified cluster  $[-c-m]$  must merge with  $V$ . No reference to arguments needs to be made in these merging instructions. The argument-interpretation of a given noun phrase arises exclusively in configuration with a thematic role-assigning head. This is an important feature of the present theory, which distinguishes it sharply from the event decomposition framework. It is possible to make explicit generalizations on how the perception of predicate-argument relations determines the projection of syntactic argument structure, but no recursive, pre-syntactic system of event-representation is needed to do that. With the constructional approach, the present theory shares the assumption that a noun

phrase can only receive an argument-interpretation, if it appears in a specific syntactic configuration. It sharply differs from the constructional approach in that it explains why and how the thematic role-assigning potential of any given construction depends on the lexical entries, from which it is projected.

Chapter four extends this approach, pursuing the interaction between lexical specification, morphological markedness, syntactic structure, and semantic interpretation. It discusses the present participle, modal infinitival complements to the auxiliaries *haben* 'have' and *sein* 'be', the erratic auxiliary selection of intransitive manner of motion verbs, verbal and adjectival properties of the second participle, *un*-prefixation, verb-particle constructions, the verbal passive, and auxiliary selection in perfect, passive and future constructions.

This book contributes to the larger research project of the Theta System in three areas. First, it supplies a cognitive-psychological foundation for the coding system, the features *c* (cause change), and *m* (mental contribution). Second, it extends the Theta System into a general theory of argument projection by formalizing the relation between lexical access, morphological markedness, and syntactic argument structure. Third, it explores a wide range of data from German, which have not been discussed in this framework before.

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