

Introduction

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Lexical Knowledge in the Organization of Language

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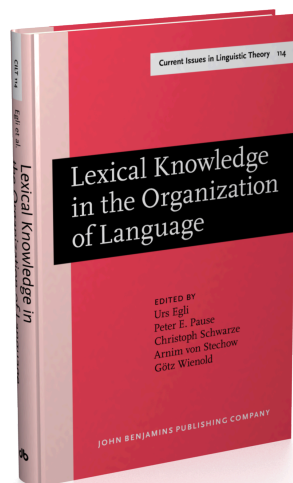
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Introduction

The present volume contains a selection of the papers presented at the 1991 International Conference on the Lexicon held in Konstanz in May 1991. Various theoretical interests and positions were represented at the conference, a situation which offered the opportunity for an exchange of ideas between scholars who ordinarily do not communicate very intensely with each other. The volume is divided into sections according to the positions and interests of the participants. Section 1 ("Syntactic aspects of lexical variation") contains three contributions based on the theory of Principles and Parameters. In Section 2 ("Model-theoretical approaches to text semantics") appear three articles from authors who are committed to the methods of model-theoretical semantics. Section 3 ("Lexical meaning and concepts") comprises four papers on conceptual analysis of lexical meaning, including problems of computational representation. Section 4 ("The historical dimension") includes just one contribution, which may be taken as expressing the editors' feeling that historical linguistics, too often neglected, must also be taken into account in order to obtain an adequate view of the role the lexicon plays in the organization of language.

Although cross-linguistic comparison was not a central purpose of the conference, a wide range of languages are treated: Bahasa Indonesia, Chinese, English, French, German, Japanese, Korean, Mohawk and Thai. The range of theoretical approaches is likewise broad; to give an overview, the single sections and contributions may be summarized as follows:

The papers collected in Section 1 all treat problems of the interface between general syntactic regularities on one hand and specifically lexical information on the other. In "Lexical and nonlexical noun incorporation", Mark C. Baker compares a syntactic treatment with a lexical treatment of noun incorporation constructions by evaluating new data from Mohawk. He reaches the conclusion that some noun incorporations have to be treated syntactically, whereas others are lexical compounds. Thus both the syntactic theory developed in Baker's (1988) "Incorporation" and the lexical approach advocated in Di Scullio & Williams (1987) "On the Definition of Word" are correct for some data but not for all.

Gereon Müller and Wolfgang Sternefeld, in “Extraction, Lexical Variation, and the Theory of Barriers”, discuss the interface problem mentioned above with respect to the theory of barriers for government. According to standard assumptions, this theory is based primarily on *structural* notions; most importantly, it differentiates between specifiers and adjuncts on the one hand, and complements on the other. However, certain phenomena strongly suggest that barrierhood of a maximal projection also depends on *lexical* properties of the embedding head, in addition to structural factors. Thus, the authors show that a proper treatment of (a) extraction from NP, (b) extraction from object clauses (which is confined to bridge contexts), (c) licensing of embedded V/2, (d) complementizer drop, (f) embedded topicalization, (g) long-distance scrambling from finite clauses, and finally (h) the occurrence of coherent infinitives presuppose a theory of barriers that takes into account lexical variation.

Following Baker (1988), Müller and Sternefeld suggest that removal of barrierhood crucially depends on (abstract or overt) incorporation (i.e., head movement), where incorporation is possible only if the embedding head has the lexically determined capacity of *m(orphanologically)-selecting* the head of its complement.

Another aspect of the problem of whether grammatical regularities are syntactic or lexical by nature is treated by Arnim von Stechow. In his paper on “Lexical decomposition in syntax” he refers to D. Dowty, who, in his *Word Meaning and Montague Grammar*, (1979) decomposes verbs of change and of causation in the semantics but not in the syntax. In Dowty’s approach, the scope ambiguity of adverbs like *again* is treated by meaning postulates. Von Stechow considers the case of German *wieder* and argues that the decomposition should be done in the syntax: certain ambiguities or non-ambiguities appear to follow directly from the surface position of the adverb. The analysis is presented in a syntactic approach in the style of recent generative grammar, which comes close in certain respects to Generative Semantics. This more abstract, syntactic approach has the advantage that the semantic component can be rather simple. It avoids theoretical difficulties arising with Dowty’s meaning postulates for *again*, which, as von Stechow points out, might turn out to be unsurmountable. The papers of Section 2 are concerned with problems of formal text semantics, and, explicitly or implicitly, with the semantics of function words.

In their article, “Epsilon operator and E-type pronouns”, Urs Egli and Klaus von Heusinger give a new approach to the representation of the definite and indefinite article. Instead of the classical iota operator, they use Hilbert’s epsilon operator, which can be seen as a generalized iota operator without the uniqueness and existence presupposition. They do not use a single operator but rather a family of context-dependent epsilon operators. This crucial modification makes it possible to use this semantic representation of the article for describing natural language phenomena. The information required by the operator may come from the non-linguistic context, when the use of the article is deictic, or from the linguistic context, i.e., from the text. In this case the use of the article is anaphoric. E-type pronouns are exactly such phenomena. The epsilon operator represents the E-type pronouns in a more adequate way than the classical iota operator. This is shown by descriptions of the difficult, so-called bishop sentences that contain two identical descriptions.

In the second article of the Section, “Tense and the logic of change”, Reinhard Muskens gives a dynamic approach tense logic. He formalizes the treatment of temporal anaphora of Discourse Representation Theory in a Montague Semantics based on classical logic. He shows that his extended version of Montague Semantics is equivalent to DRT and other dynamic approaches like Dynamic Predicate Logic or the Dynamic Montague Grammar of Groenendijk and Stokhof. The basic idea of the dynamic approach is that the meaning of a sentence is not its truth value but the change of the states of affairs before and after the sentence. In model theory this is represented in a change to the assignments of a sentence under consideration.

Musken’s reformulation shows that we do not need the intermediate level of DRTs. Furthermore, the advantage of Muskens’ extended Montague Semantics is that the subsentence level can be analyzed, which in DRT is impossible, or at least difficult. The author first analyses nominal anaphora in donkey sentences using the dynamic approach. Then he gives a model-theoretical semantics of tense operators, which were first introduced by Reichenbach. With his analysis he solves even such difficult cases as the “imperfective paradox”.

Aarne Ranta’s theory of text grammar is demonstrated in his contribution “Understanding and interpretation of text”. He shows how intuitionistic or constructive type theory in the format of Martin-Löf can be applied to natural language phenomena. This is the other way round from Montague, who translated natural language into a formal language. Ranta translates type-

theoretical formulae into English sentences. His central type-theoretical structure is the context, a progressive sequence of hypotheses standing for propositions. To produce an assertion one has to give a proof for an hypothesis. With this underlying structure Ranta gives a formal representation of fictional discourse, that is, discourse that is heavily dependent on background assumptions, and he discusses anaphora as well as definite and indefinite noun phrases. Finally, he distinguishes between understanding as seeing a form on the one hand and interpreting as filling in the form seen, on the other.

The papers of Section 3 concern the treatment of lexical variation and the interface between linguistic form, linguistic semantics and non-linguistic knowledge.

In the first paper of this Section, “Describing verbs of motion in Prolog”, Bruce Mayo presents a computational model of lexical semantics, based on recent developments in semantics that have pointed to a distinction between lexical and conceptual levels of meaning (cf. Schwarze and Schepping, this volume). Drawing on evidence from word usage, this “two-level” approach postulates semantic structures at a level of cognitive organization between syntax and conceptual knowledge. To test the plausibility of the postulated organization, a computer program was created that can model a small class of dialogs like those used to gather evidence for the two-level hypothesis. The implementation shows how structures like the ones proposed can be formulated and inserted between sentence analysis (at the F-structure level of Lexical Functional Grammar) and world-knowledge.

Eberhard Pause, Achim Botz and Markus Egg, in their contribution “Partir, c’est quitter un peu”, discuss several ways of representing lexical polysemy. Two fundamentally different approaches consist in deriving the readings of a lexeme from one prominent variant, on one hand, and, on the other, choosing a common abstract meaning as a starting point for all readings. The authors have employed the latter method to describe polysemous French verbs, in order to test its adequacy in practice.

Their approach shares the assumption that lexical description involves both a semantic and a conceptual stratum. The semantic representation of a lexeme constitutes the core meaning common to all of its variants. Rules of usage, which characterize the variational spectrum available for a word, link the two strata. The conceptual representation can be derived from the rules of usage and the concepts corresponding to the core meaning and is integrated into the common conceptual knowledge.

Evidence for a boundary between lexical and conceptual structure has been gathered largely from studies of single languages, showing that the lexicon indexes and organizes concepts for communicative purposes. Christoph Schwarze and Marie-Theres Schepping, in their paper “Polysemy in a two-level semantics” argue that cross-linguistic comparison reveals additional strong evidence that the lexical entries of a language operate on a cognitive stratum distinct from that of conceptual structure. Specific evidence from contrasts in lexical gaps, in lexical differentiation and in lexical variation is adduced. Other evidence suggests that polysemy results from operations on lexical structures that are motivated by features of conceptual structure. It is proposed to represent lexical meanings with frame structures, and polysemy by processes of merging and adjusting frames.

Götz Wienold, in his article “Lexical and conceptual structures in expressions for movement and space”, also argues on the basis of comparative data. He discusses lexicalization type and word class as variables intervening between concepts and lexical items. Starting from Talmy’s typology of lexicalization of movement verbs, he presents monomorphemic movement verbs from four East Asian and South East Asian languages: Japanese, Korean, Thai and Bahasa Indonesia. All four of them are path languages and exhibit the path type much more strongly than the Romance languages do. Path-type languages also have an inventory, albeit limited, of manner verbs. The bulk of manner lexicalizations in the four languages, however, takes place in the class of adverbs. By contrast, there are manner languages like German that do not have any genuine monomorphemic path verbs at all. There seems to be a basic set of manner movement verbs which is independent of the path/manner type distinction. The linguistic reality of the concept of lexicalization type can also be approached through the study of loan words. Comparing Romance movement verb loans into English and into German leads to the hypothesis that there is a lexicalization filter in German which prohibits the permanent lexicalization of monomorphemic path verbs. Chinese movement verb loans into Japanese and Korean on the other hand, show both manner and path verbs, as the path type allows for the lexicalization of the basic set of manner verbs. A typical manner language like English or German will have a rich array of manner verbs beyond the basic set.

In the last Section, Tatsuo Miyajima’s contribution “A contrastive study of vocabulary growth in different languages” presents a statistical study of the growth of vocabulary in four languages: Japanese, Chinese, French and

English. Miyajima is probably the first scholar to have undertaken such a large-scale statistical comparison involving (mostly) unrelated languages. The 1000 most frequently used words in the four present-day languages are compared as to relative age (assessed by the oldest mention in dictionaries). The comparison shows that the relative age of present-day vocabulary is strongly related to periods of intensive change in the respective languages (e.g., modernization of Japan in the Meji period, modernization of China somewhat later than Japan, French influence upon English after the Norman Conquest). As a check on the reliability of the method, those among the 1000 most frequent English words which have a semantic counterpart among the respective Japanese words are compared with the Japanese set again as to relative age. The results of the previous comparison are confirmed and show the reliability of the procedure.