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The Structure of the Lexicon

Human versus Machine

Walter de Gruyter

Semantic Relations and the Lexicon

Antonymy, Synonymy and other Paradigms

Cambridge University Press **Semantic Relations and the Lexicon explores the many paradigmatic semantic relations between words, such as synonymy, antonymy and hyponymy, and their relevance to the mental organization of our vocabularies. Drawing on a century's research in linguistics, psychology, philosophy, anthropology and computer science, M. Lynne Murphy proposes a pragmatic approach to these relations. Whereas traditional approaches have claimed that paradigmatic relations are part of our lexical knowledge, Dr Murphy argues that they constitute metalinguistic knowledge, which can be derived through a single relational principle, and may also be stored as part of our extra-lexical, conceptual representations of a word. Part I shows how this approach can account for the properties of lexical relations in ways that traditional approaches cannot, and Part II examines particular relations in detail. This book will serve as an informative handbook for all linguists and cognitive scientists interested in the mental representation of vocabulary.**

Lexicon Development for Speech and Language Processing

Springer **This work offers a survey of methods and techniques for structuring, acquiring and maintaining lexical resources for speech and language processing. The first chapter provides a broad survey of the field of computational lexicography, introducing most of the issues, terms and topics which are addressed in more detail in the rest of the book. The next two chapters focus on the structure and the content of man-made lexicons, concentrating respectively on (morpho-)syntactic and (morpho-)phonological information. Both chapters adopt a declarative constraint-based methodology and pay ample attention to the various ways in which lexical generalizations can be formalized and exploited to enhance the consistency and to reduce the redundancy of lexicons. A complementary perspective is offered in the next two chapters, which present techniques for automatically deriving lexical resources from text corpora. These chapters adopt an inductive data-oriented methodology and focus also on methods for tokenization, lemmatization and shallow parsing. The next three chapters focus on speech synthesis and speech recognition.**

The Lexicon Graph Model

A Generic Model for Multimodal Lexicon Development

AQ-Verlag

Sign Language

An International Handbook

Walter de Gruyter **Sign language linguists show here that all questions relevant to the linguistic investigation of spoken languages can be asked about sign languages. Conversely, questions that sign language linguists consider - even if spoken language researchers have not asked them yet - should also be asked of spoken languages. The HSK handbook Sign Language aims to provide a concise and comprehensive overview of the state of the art in sign language linguistics. It includes 44 chapters, written by leading researchers in the field, that address issues in language typology, sign language grammar, psycholinguistics, neurolinguistics, sociolinguistics, and language documentation and transcription. Crucially, all topics are presented in a way that makes them accessible to linguists who are not familiar with sign language linguistics.**

Conceptual Transfer in the Bilingual Mental Lexicon

Trafford Publishing **Combining theory, psychological tests, and corpus, this book is an interdisciplinary study of the conceptual transfer of abstract nouns in the bilingual mental lexicon of professional translators, a treatise in philosophical linguistics, and a challenger of traditional ideas in the psychology of concepts. Not only does it shatter the common belief among cognitive scientists that abstract concepts are not researchable and cannot be subject to empirical investigation, it goes far beyond this to prove that abstract concepts—such as science, language, religion, etc.—are even more amenable to empirical research than concrete ones. It establishes a new paradigm in the relationship between language and cognition that allows each to be accessed through the other. Arguing that lexical-semantic analysis of concepts should precede psychological tasks, and supplying the tools therefore, it provides a new cognitive approach to lexical semantics and a new semantic approach to cognitive psychology. While it addresses itself to all these topics drastically and untraditionally, the major topic of this book still is the conceptual transfer in the bilingual mental lexicon of English-Arabic translators.**

Asymmetrical Concepts after Reinhart Koselleck

Historical Semantics and Beyond

transcript Verlag **Although the asymmetrical concepts have been well-known to scholars across the social sciences and humanities, their role in structuring the human world has never been an object of detailed research. 35 years ago Reinhart Koselleck sketched out the historical semantics of the oppositions »Hellenes«/»barbarians«, »Christians«/»pagans« and »Übermensch«/»Untermensch«, but his insights, though eagerly cited, have been rarely developed in a systematic fashion. This volume intends to remedy this situation by bringing together a small number of scholars at the crossroads of history, sociology, literary criticism, linguistics, political science and international studies in order to elaborate on Koselleck's notion of asymmetric counter-concepts and adapt it to current research needs.**

Cognitive Processing in Second Language Acquisition

Inside the Learner's Mind

John Benjamins Publishing **This edited volume represents state of the field research linking cognition and second language acquisition, reflecting the experience of the learner when engaged in noticing, input/output processing, retrieval, and even attrition of target forms. Contributions are both theoretical and practical, describing a variety of L1, L2 and L3 combinations from around the world as observed in spoken, written, and computer-mediated contexts. The book relates conditions of language, task, medium or environment to how learners make decisions about language, with discussions about the application or efficacy of these conditions on linguistic success and development, and pedagogical implications.**

Computational Processing of the Portuguese Language

7th International Workshop, PROPOR 2006, Itatiaia, Brazil, May 13-17, 2006, Proceedings

Springer **This book constitutes the thoroughly refereed proceedings of the 7th International Workshop on Computational Processing of the Portuguese Language, PROPOR 2006. The 20 revised full papers and 17 revised short papers presented here are organized in topical sections on automatic summarization, resources, translation, named entity recognition, tools and frameworks, systems and models, information extraction, speech processing, lexicon, morpho-syntactic studies, and Web, corpus and evaluation.**

Phonological Augmentation in Prominent Positions

Routledge **Phonologically prominent or "strong" positions are well known for their ability to resist positional neutralization processes such as vowel reduction or place assimilation. However, there are also cases of neutralization that affect only strong positions, as when stressed syllables must be heavy, default stress is inserted into roots, or word-initial onsets must be low in sonority. In this book, Jennifer Smith shows that phonological processes specific to strong positions are distinct from those involved in classic positional neutralization effects because they always serve to augment the strong position with a perceptually salient characteristic. Formally, positional augmentation effects are modeled by means of markedness constraints relativized to strong positions. Because positional augmentation constraints are subject to certain substantive restrictions, as seen in their connection to perceptual salience, this study has implications for the relationship between functional grounding and phonological theory.**

Spatial Semiotics and Spatial Mental Models

Figure-Ground Asymmetries in Language

Walter de Gruyter GmbH & Co KG **This book presents novel data from endangered languages and cultures that are ever so often still not focused on. It combines different disciplines to capture the intricacies of spatial orientation and navigation. Also, the interplay between culture through language and practices presents new insights in the importance of combining cognitive semantics with cognitive anthropology.**

Handbook of Natural Language Processing

CRC Press **This study explores the design and application of natural language text-based processing systems, based on generative linguistics, empirical copus analysis, and artificial neural networks. It emphasizes the practical tools to accommodate the selected system.**

Aspectuality

An Onomasiological Model Applied to the Romance Languages

Walter de Gruyter GmbH & Co KG **This synchronic study presents a new onomasiological, frame-theoretical model for the description, classification and theoretical analysis of the cross-linguistic content category aspectuality. It deals specifically with those pieces of information, which, in their interplay, constitute the aspectual value of states of affairs. The focus is on Romance Languages, although the model can be applied just as well to other languages, in that it is underpinned by a principle grounded in a fundamental cognitive ability: the delimitation principle. Unlike traditional approaches, which generally have a semasiological orientation and strictly adhere to a semantic differentiation between grammatical aspect and lexical aspect (Aktionsart), this study makes no such differentiation and understands these as merely different formal realisations of one and the same content category: aspectuality.**

Cognitive Dynamics in Linguistic Interactions

Cambridge Scholars Publishing **In the era of globalization, issues of international and intercultural communication in different professional areas become even more acute. There is a growing demand to increase the efficiency of higher learning educational programs, called upon to enhance second or foreign language communicative competence of would-be specialists. Yet the existing methods of teaching a foreign or second language are far from being satisfactory in terms of expected efficiency. This is symptomatic of a general**

methodological problem: we lack holistic understanding of how natural language shapes the cognitive domain of human interactions. Orthodox linguistic science is based on a premise that language is a tool for expressing and conveying thought, thus making communication between humans possible. This dualistic assumption ignores the fact that just as there may be no language without interacting human subjects, there may be no human thought (or, largely, humanness) to speak of without languaging as species-specific behavior, because 'we as humans happen in language' (Maturana). The study of language, therefore, must focus on the dynamics of linguistic interactions, and dialogue should be pursued between applied linguists and theoreticians about the conceptual-theoretic foundations of linguistic education. This volume is just such an attempt.

Motivation in Language

Studies in Honor of Günter Radden

John Benjamins Publishing **Topics covered in this volume include: extreme subjectification - English tense and modals; schemas and lexical blends; valency and diathesis; functions of the preposition "kuom" in Dholou; and grammaticalization of postpositions in German.**

Understanding Language

Man or Machine

Springer Science & Business Media **This textbook is intended for graduate students in computer science and linguistics who are interested in developing expertise in natural language processing (NLP) and in those aspects of artificial intelligence which are concerned with computer models oflanguage comprehension. The text is somewhat different from a number of other excellent textbooks in that its foci are more on the linguistic and psycho linguistic prerequisites and on foundational issues concerning human linguistic behavior than on the description of the extant models and algorithms. The goal is to make the student, undertaking the enormous task of developing computer models for NLP, well aware of the major diffi culties and unsolved problems, so that he or she will not begin the task (as it has often been done) with overoptimistic hopes or claims about the generalizability of models, when such hopes and claims are incon sistent either with some aspects of the formal theory or with known facts about human cognitive behavior. Thus, I try to enumerate and explain the variety of cognitive, linguistic, and pragmatic data which must be understood and formalized before they can be incorporated into a computer model.**

Language Production, Cognition, and the Lexicon

Springer **The book collects contributions from well-established researchers at the interface between language and cognition. It provides an overview of the latest insights into this interdisciplinary field from the perspectives of natural language processing, computer science, psycholinguistics and cognitive science. One of the pioneers in cognitive natural language processing is Michael Zock, to whom this volume is dedicated. The structure of the book reflects his main research interests: lexicon and lexical analysis, semantics, language and speech generation, reading and writing technologies, language resources and language engineering. The book is a valuable reference work and authoritative information source, giving an overview on the field and describing the state of the art as well as future developments. It is intended for researchers and advanced students interested in the subject. One of the pioneers in cognitive natural language processing is Michael Zock, to whom this volume is dedicated. The structure of the book reflects his main research interests: Lexicon and lexical analysis, semantics, language and speech generation, reading and writing technologies, language resources and language engineering. The book is a valuable reference work and authoritative information source, giving an overview on the field and describing the state of the art as well as future developments. It is intended for researchers and advanced students interested in the subject. One of the pioneers in cognitive natural language processing is Michael Zock, to whom this volume is dedicated. The structure of the book reflects his main research interests: Lexicon and lexical analysis, semantics, language and speech generation, reading and writing technologies, language resources and language engineering. The book is a valuable reference work and authoritative information source, giving an overview on the field and describing the state of the art as well as future developments. It is intended for researchers and advanced students interested in the subject.**

Human Language Technology. Challenges for Computer Science and Linguistics

4th Language and Technology Conference, LTC 2009, Roznan, Poland, November 6-8, 2009, Revised Selected Papers

Springer Science & Business Media **This book constitutes the refereed proceedings of the 4th Language and Technology Conference: Challenges for Computer Science and Linguistics, LTC 2009, held in Poznan, Poland, in November 2009. The 52 revised and in many cases substantially extended papers presented in this volume were carefully reviewed and selected from 103 submissions. The contributions are organized in topical sections on speech processing, computational morphology/lexicography, parsing, computational semantics, dialogue modeling and processing, digital language resources, WordNet, document processing, information processing, and machine translation.**

Research Awards Index

Frames, Fields, and Contrasts

New Essays in Semantic and Lexical Organization

Routledge **Recently, there has been a surge of interest in the lexicon. The demand for a fuller and more adequate understanding of lexical meaning required by developments in computational linguistics, artificial intelligence, and cognitive science has stimulated a refocused interest in linguistics, psychology, and philosophy. Different disciplines have studied lexical structure from their own vantage points, and because scholars have only intermittently communicated across disciplines, there has been little recognition that there is a common subject matter. The conference on which this volume is based brought together interested thinkers across the disciplines of linguistics, philosophy, psychology, and computer science to exchange ideas, discuss a range of questions and approaches to the topic, consider alternative research strategies and methodologies, and formulate interdisciplinary hypotheses concerning lexical organization. The essay subjects discussed include: * alternative and complementary conceptions of the structure of the lexicon, * the nature of semantic relations and of polysemy, * the relation between meanings, concepts, and lexical organization, * critiques of truth-semantics and referential theories of meaning, * computational accounts of lexical information and structure, and * the advantages of thinking of the lexicon as ordered.**

New Trends of Research in Ontologies and Lexical Resources

Ideas, Projects, Systems

Springer Science & Business Media In order to exchange knowledge, humans need to share a common lexicon of words as well as to access the world models underlying that lexicon. What is a natural process for a human turns out to be an extremely hard task for a machine: computers can't represent knowledge as effectively as humans do, which hampers, for example, meaning disambiguation and communication. Applied ontologies and NLP have been developed to face these challenges. Integrating ontologies with (possibly multilingual) lexical resources is an essential requirement to make human language understandable by machines, and also to enable interoperability and computability across information systems and, ultimately, in the Web. This book explores recent advances in the integration of ontologies and lexical resources, including questions such as building the required infrastructure (e.g., the Semantic Web) and different formalisms, methods and platforms for eliciting, analyzing and encoding knowledge contents (e.g., multimedia, emotions, events, etc.). The contributors look towards next-generation technologies, shifting the focus from the state of the art to the future of Ontologies and Lexical Resources. This work will be of interest to research scientists, graduate students, and professionals in the fields of knowledge engineering, computational linguistics, and semantic technologies.

Language

Computational Processing of the Portuguese Language

... International Workshop, PROPOR ... : Proceedings

Linguistics for the Age of AI

MIT Press A human-inspired, linguistically sophisticated model of language understanding for intelligent agent systems. One of the original goals of artificial intelligence research was to endow intelligent agents with human-level natural language capabilities. Recent AI research, however, has focused on applying statistical and machine learning approaches to big data rather than attempting to model what people do and how they do it. In this book, Marjorie McShane and Sergei Nirenburg return to the original goal of recreating human-level intelligence in a machine. They present a human-inspired, linguistically sophisticated model of language understanding for intelligent agent systems that emphasizes meaning--the deep, context-sensitive meaning that a person derives from spoken or written language.

Books in Print

Probus

Computational Linguistics

International Journal of the Sociology of Language

Current Contents

Arts & humanities

Natural Language Computing

An English Generative Grammar in Prolog

Psychology Press This book's main goal is to show readers how to use the linguistic theory of Noam Chomsky, called Universal Grammar, to represent English, French, and German on a computer using the Prolog computer language. In so doing, it presents a follow-the-dots approach to natural language processing, linguistic theory, artificial intelligence, and expert systems. The basic idea is to introduce meaningful answers to significant problems involved in representing human language data on a computer. The book offers a hands-on approach to anyone who wishes to gain a perspective on natural language processing -- the computational analysis of human language data. All of the examples are illustrated using computer programs. The optimal way for a person to get started is to run these existing programs to gain an understanding of how they work. After gaining familiarity, readers can begin to modify the programs, and eventually write their own. The first six chapters take a reader who has never heard of non-procedural, backtracking, declarative languages like Prolog and, using 29 full page diagrams and 75 programs, detail how to represent a lexicon of English on a computer. A bibliography is programmed into a Prolog database to show how linguists can manipulate the symbols used in formal representations, including braces and brackets. The next three chapters use 74 full page diagrams and 38 programs to show how data structures (subcategorization, selection, phrase marker) and processes (top-down, bottom-up, parsing, recursion) crucial in Chomsky's theory can be explicitly formulated into a constraint-based grammar and implemented in Prolog. The Prolog interpreters provided with the book are basically identical to the high priced Prologs, but they lack the speed and memory capacities. They are ideal since anything learned about these Prologs carries over unmodified to C-Prolog and Quintas on the mainframes. Anyone who studies the prolog implementations of the lexicons and syntactic principles of combination should be able to use Prolog to represent their own linguistic data on the most complex Prolog computer available, whether their data derive from syntactic theory, semantics, sociolinguistics, bilingualism, language acquisition, language learning, or some related area in which the grammatical patterns of words and

phrases are more crucial than concepts of quantity. The printed examples illustrate C-Prolog on an Ultrix Vax, a standard university configuration. The disk included with the book contains shareware version of Prolog-2 (IBM PC) and MacProlog (Macintosh) plus versions of the programs that run on C-Prolog, Quintas, Prolog-2, and MacProlog. Appendix II contains information about how to use the Internet, Gopher, CompuServe, and the free More BBS to download the latest copies of Prolog, programs, lexicons, and parsers. All figures (100+) in the book are available scaled to make full size transparencies for class lectures. Valuable special features of this volume include: * more than 100 full page diagrams illustrating the basic concepts of natural language processing, Prolog, and Chomsky's linguistic theories; * more than 100 programs -- illustrated in at least one script file -- showing how to encode the representations and derivations of generative grammar into Prolog; * more than 100 session files guiding readers through their own hands-on sessions with the programs illustrating Chomsky's theory; * a 3.5" disk (IBM Format) containing: 1. all programs in versions to run in C-Prolog or Quintas Prolog on an Ultrix Vax, and on an IBM PC and a Macintosh, 2. a shareware version of Prolog-2 for IBM PC clones which runs all programs in the book, 3. a shareware version of MacProlog for Macintosh which runs all programs in the book; * instructions on using Internet, CompuServe, and the free More BBS to download the latest copies of Prolog, programs, lexicons, and parsers; and * numerous references enabling interested students to pursue questions at greater depth by consulting the items in the extensive bibliography.

Lexical Ambiguity Resolution

Perspective from Psycholinguistics, Neuropsychology and Artificial Intelligence

Elsevier The most frequently used words in English are highly ambiguous; for example, Webster's Ninth New Collegiate Dictionary lists 94 meanings for the word "run" as a verb alone. Yet people rarely notice this ambiguity. Solving this puzzle has commanded the efforts of cognitive scientists for many years. The solution most often identified is "context": we use the context of utterance to determine the proper meanings of words and sentences. The problem then becomes specifying the nature of context and how it interacts with the rest of an understanding system. The difficulty becomes especially apparent in the attempt to write a computer program to understand natural language. Lexical ambiguity resolution (LAR), then, is one of the central problems in natural language and computational semantics research. A collection of the best research on LAR available, this volume offers eighteen original papers by leading scientists. Part I, Computer Models, describes nine attempts to discover the processes necessary for disambiguation by implementing programs to do the job. Part II, Empirical Studies, goes into the laboratory setting to examine the nature of the human disambiguation mechanism and the structure of ambiguity itself. A primary goal of this volume is to propose a cognitive science perspective arising out of the conjunction of work and approaches from neuropsychology, psycholinguistics, and artificial intelligence--thereby encouraging a closer cooperation and collaboration among these fields. Lexical Ambiguity Resolution is a valuable and accessible source book for students and cognitive scientists in AI, psycholinguistics, neuropsychology, or theoretical linguistics.

Forthcoming Books

Computation of Language

An Essay on Syntax, Semantics and Pragmatics in Natural Man-Machine Communication

Springer Science & Business Media The study of linguistics has been forever changed by the advent of the computer. Not only does the machine permit the processing of enormous quantities of text thereby securing a better empirical foundation for conclusions-but also, since it is a modelling device, the machine allows the implementation of theories of grammar and other kinds of language processing. Models can have very unexpected properties both good and bad-and it is only through extensive tests that the value of a model can be properly assessed. The computer revolution has been going on for many years, and its importance for linguistics was recognized early on, but the more recent spread of personal workstations has made it a reality that can no longer be ignored by anyone in the subject. The present essay, in particular, could never have been written without the aid of the computer. I know personally from conversations and consultations with the author over many months how the book has changed. If he did not have at his command a powerful typesetting program, he would not have been able to see how his writing looked and exactly how it had to be revised and amplified. Even more significant for the evolution of the linguistic theory is the easy testing of examples made possible by the implementation of the parser and the computer-held lexicon. Indeed, the rule set and lexicon grew substantially after the successes of the early implementations created the desire to incorporate more linguistic phenomena.

Human Language Technology. Challenges for Computer Science and Linguistics

6th Language and Technology Conference, LTC 2013, Poznań, Poland, December 7-9, 2013. Revised Selected Papers

Springer This book constitutes the refereed proceedings of the 6th Language and Technology Conference: Challenges for Computer Science and Linguistics, LTC 2013, held in Poznań, Poland, in December 2013. The 31 revised and in many cases substantially extended papers presented in this volume were carefully reviewed and selected from 103 submissions.The papers selected to this volume belong to various fields of Human Language Technologies and illustrate a large thematic coverage of the LTC conferences. To make the presentation of the papers possibly transparent we have "structured" them into 9 chapters. These are: Speech Processing, Morphology, Parsing Related Issues, Computational Semantics, Digital Language Resources, Ontologies and Wordnets, Written Text and Document Processing, Information and Data Extraction, and Less-Resourced Languages.

Computer Corpus Lexicography

This book introduces the reader to the changing notions of the lexicon and dictionary-making, using a convergence of perspectives from computational linguistics, corpus linguistics, and computational lexicography/lexicology. The main issues include: the relation between lexicon and corpus; corpus-based lexical modelling of language; the computational storage of the lexicon. From this, the book constructs and applies a framework for lexicon-building to a case study. It also stresses the importance of the Internet and World Wide Web for dictionary research and study.

Linked Lexical Knowledge Bases

Foundations and Applications

Springer Nature This book conveys the fundamentals of Linked Lexical Knowledge Bases (LLKB) and sheds light on their different aspects from various perspectives, focusing on their construction and use in natural language processing (NLP). It characterizes a wide range of both expert-based and collaboratively constructed lexical knowledge bases. Only basic familiarity with NLP is required and this book has been written for both students and researchers in NLP and related fields who are interested in knowledge-based approaches to language analysis and their applications. Lexical Knowledge Bases (LKBs) are indispensable in many areas of natural language processing, as they encode human knowledge of language in machine readable form, and as such, they are required as a

reference when machines attempt to interpret natural language in accordance with human perception. In recent years, numerous research efforts have led to the insight that to make the best use of available knowledge, the orchestrated exploitation of different LKBs is necessary. This allows us to not only extend the range of covered words and senses, but also gives us the opportunity to obtain a richer knowledge representation when a particular meaning of a word is covered in more than one resource. Examples where such an orchestrated usage of LKBs proved beneficial include word sense disambiguation, semantic role labeling, semantic parsing, and text classification. This book presents different kinds of automatic, manual, and collaborative linkings between LKBs. A special chapter is devoted to the linking algorithms employing text-based, graph-based, and joint modeling methods. Following this, it presents a set of higher-level NLP tasks and algorithms, effectively utilizing the knowledge in LLKBs. Among them, you will find advanced methods, e.g., distant supervision, or continuous vector space models of knowledge bases (KB), that have become widely used at the time of this book's writing. Finally, multilingual applications of LLKB's, such as cross-lingual semantic relatedness and computer-aided translation are discussed, as well as tools and interfaces for exploring LLKBs, followed by conclusions and future research directions.

Dictionaries in the Electronic Age

Fifth Annual Conference of the UW Centre for the New Oxford English Dictionary : Proceedings of the Conference, September 18-19, 1989, St. Catherine's College, Oxford, England

Machine Translation and the Information Soup

Third Conference of the Association for Machine Translation in the Americas, AMTA'98, Langhorne, PA, USA, October 28–31, 1998 Proceedings

Springer **Machine Translation and the Information Soup! Over the past fty years, machine translation has grown from a tantalizing dream to a respectable and stable scienti c-linguistic enterprise, with users, c- mercial systems, university research, and government participation. But until very recently, MT has been performed as a relatively distinct operation, so- what isolated from other text processing. Today, this situation is changing rapidly. The explosive growth of the Web has brought multilingual text into the reach of nearly everyone with a computer. We live in a soup of information, an increasingly multilingual bouillabaisse. And to partake of this soup, we can use MT systems together with more and more tools and language processing technologies|information retrieval engines, - tomated text summarizers, and multimodal and multilingual displays. Though some of them may still be rather experimental, and though they may not quite t together well yet, it is clear that the future will o er text manipulation systems that contain all these functions, seamlessly interconnected in various ways.**

Human-computer Interaction--INTERACT.

Translating and the Computer