Applying the Meaning-Text Theory Model to Text Synthesis with Low- and Middle Density Languages in Mind

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The linguistic model as defined in the Meaning Text Theory (MTT) is, first of all, a language production model. This makes MTT especially suitable for language engineering tasks related to synthesis: text generation, summarization, paraphrasing, speech generation, and the like. In this article, we focus on text generation. Large scale text generation requires substantial resources, namely grammars and lexica. While these resources are increasingly compiled for high density languages, for low- and middle density languages often no generation resources are available. The question on how to obtain them in a most efficient way becomes thus imminent. In this article, we address this question for MTT-oriented text generation resources.

1. Introduction

With the progress of the state of the art in Computational Linguistics and Natural Language Processing, language engineering has become an increasingly popular and pressing task. This is in particular true for applications in which text synthesis constitutes an important part – among other things, automatic text generation, summarization, paraphrasing, and machine translation.

Large coverage text synthesis in general requires substantial resources for each of the languages involved. While for high density languages, more and more resources are available, many of the low- and middle density languages are still not covered. This may be due to the lack of reference corpora, the lack of specialists knowledgeable in the field and in the language in question, or other circumstances. The question which must obviously be answered when a text synthesis application is to be realized for a low- or middle density language for which no text synthesis resources are available as yet: How can these resources be obtained in the most rapid and efficient way? This obviously depends on the exact kind of resources needed and thus, to a major extent, on the application and the linguistic framework underlying the implementation of the given system that addresses the application.

In this article, we focus on one case of text synthesis: the natural language text generation. We discuss the types of resources required for a text generator based on the *Meaning Text Theory*, MTT [1, 2, 3, and 4]. MTT is one of the most common rule-based linguistic theories used for text generation. This is not by chance: MTT's model is synthesis (rather than analysis, or parsing) oriented and it is formal enough to allow

Meaning Text Theory

Igor Mel'čuk

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Recent Trends in Meaning-text Theory Leo Wanner,1997-01-01 The present volume contains articles of well known representatives of the Meaning Text Theory MTT and other related linguistic theories Founded by I Mel cuk and A Zholkovsky in the sixties in Moscow MTT soon became known in the West as a prominent outsider theory The picture changed since then though MTT gained importance in several areas of linguistics and computational linguistics It influenced the design of new grammar formalisms such as Dependency Tree Grammars Also specific parts of MTT have been directly overtaken into other theories consider for example the work on integrating Lexical Functions into Pustejovsky s Generative Lexicon The present volume is a further convincing demonstration of MTT s liveliness and relevance to the field s burning issues The focus of the volume is on semantics semantic representation and relation of semantics to surface in MTT Six out of eight articles Polgu re Escalier Paducheva St Germain Beck Bogulavsky deal with problems related to these topics while the last two articles of the volume Sgall and Rambow Joshi throw a bridge between MTT or more precisely between dependency based theories of which MTT is one instantiation and other linguistic theories *Selected Lexical and Grammatical Issues in the Meaning-text Theory* Leo Wanner,Igor? Aleksandrovi? Mel??uk,2007-01-01 The Meaning Text Theory MTT is a lexicon centred and dependency based theory for the description of language using a holistic model that incorporates semantics syntax morphology and lexis This volume prepared on the occasion of Igor Mel cuk s 70th birthday offers a cross section of the current advances in MTT and its applications The first part of the book focuses on lexical phenomena that are still largely neglected in mainstream linguistics sound symbolism as manifested by ideophones and idiosyncratic lexical relations as manifested by lexical functions LFs In particular LFs are addressed from different angles including the introduction of new standard LFs the argument structure and semantic decomposition of lexical relations captured by LFs automatic recognition

of LF instances in corpora and the use of LFs in terminology and natural language processing The second part of the book deals with such prominent model oriented issues as semantic paraphrasing in MTT the role of phrase structure in MTT and syntactic analysis within MTT *MTT 2007* Kim Gerdes,2007 **Meaning-text Theory** Valentina Apresjan,2013 **An Advanced Introduction to Semantics** Igor Mel'čuk,Jasmina Milićević,2020-04-02 This book is an advanced introduction to semantics that presents this crucial component of human language through the lens of the Meaning Text theory an approach that treats linguistic knowledge as a huge inventory of correspondences between thought and speech Formally semantics is viewed as an organized set of rules that connect a representation of meaning Semantic Representation to a representation of the sentence Deep Syntactic Representation The approach is particularly interesting for computer assisted language learning natural language processing and computational lexicography as our linguistic rules easily lend themselves to formalization and computer applications The model combines abstract theoretical constructions with numerous linguistic descriptions as well as multiple practice exercises that provide a solid hands on approach to learning how to describe natural language semantics *Semantics* Igor Mel'čuk,2015-01-14 This book presents an innovative and novel approach to linguistic semantics starting from the idea that language can be described as a mechanism for the expression of linguistic Meanings as particular surface forms or Texts Semantics is specifically that system of rules that ensures a transition from a Semantic Representation of the Meaning of a family of synonymous sentences to the Deep Syntactic Representation of a particular sentence Framed in the terms of Meaning Text linguistics the present volume closes the publication of the three volume series It discusses in detail several linguistic notions crucial to the development of Meaning Text models of natural languages semantic and syntactic actants government pattern lexical functions linguistic connotations phrasemes the meaning of grammatical cases and linguistic dependencies The notions under analysis are illustrated from a variety of languages Reflecting the author s life long dedication to the study of the semantics and syntax of natural language this book is a paradigm shifting contribution to the language sciences whose originality and daring will make it essential reading for linguists anthropologists semioticians and computational linguists MTT 2003 École normale supérieure (Paryż).,2003 *Selected Lexical and Grammatical Issues in the Meaning Text Theory* Leo Wanner,2007-02-01 The Meaning Text Theory MTT is a lexicon centred and dependency based theory for the description of language using a holistic model that incorporates semantics syntax morphology and lexis This volume prepared on the occasion of Igor Mel uk s 70th birthday offers a cross section of the current advances in MTT and its applications The first part of the book focuses on lexical phenomena that are still largely neglected in mainstream linguistics sound symbolism as manifested by ideophones and idiosyncratic lexical relations as manifested by lexical functions LFs In particular LFs are addressed from different angles including the introduction of new standard LFs the argument structure and semantic decomposition of lexical relations captured by LFs automatic recognition of LF instances in corpora and the use of LFs in terminology and natural language

processing The second part of the book deals with such prominent model oriented issues as semantic paraphrasing in MTT the role of phrase structure in MTT and syntactic analysis within MTT   International Workshop on the Meaning-Text Theory Gesellschaft für Mathematik und Datenverarbeitung,1992   **Semantics** Igor? Aleksandrovi? Mel??uk,Igor A. Mel'cuk,2012 This book presents an innovative and novel approach to linguistic semantics beginning with the idea that language can be described as a system for the expression of linguistic Meanings as particular surface forms or Texts Semantics is specifically that system of rules that ensures a correct transition from a Semantic Representation of the Meaning of a family of synonymous sentences to the Deep Syntactic Representation of a particular sentence Framed in the terms of Meaning Text linguistics this volume discusses in detail the problems of Semantic Representation including the semantic structure of utterances the semantics of Causation in English and communicative or information structure Based on the author s life long dedication to the study of the semantics and syntax of natural language this book is a paradigm shifting contribution to the language sciences whose originality and daring will make it essential reading for linguists anthropologists semioticians and computational linguists   **Natural Language Processing and Computational Linguistics 2** Mohamed Zakaria Kurdi,2018-02-28 Natural Language Processing NLP is a scientific discipline which is found at the intersection of fields such as Artificial Intelligence Linguistics and Cognitive Psychology This book presents in four chapters the state of the art and fundamental concepts of key NLP areas Are presented in the first chapter the fundamental concepts in lexical semantics lexical databases knowledge representation paradigms and ontologies The second chapter is about combinatorial and formal semantics Discourse and text representation as well as automatic discourse segmentation and interpretation and anaphora resolution are the subject of the third chapter Finally in the fourth chapter I will cover some aspects of large scale applications of NLP such as software architecture and their relations to cognitive models of NLP as well as the evaluation paradigms of NLP software Furthermore I will present in this chapter the main NLP applications such as Machine Translation MT Information Retrieval IR as well as Big Data and Information Extraction such as event extraction sentiment analysis and opinion mining   **The theory and practice of examples in bilingual dictionaries** Alfonso Rascón Caballero,2024-07-22 The dictionary example is the culminating component of the information presented in articles of dictionaries intended for language learning This study analyses the example comprehensively its provenance its theoretical status its distinction from multiword lexical units to be presented as infralemmas types and specific functions The example not only illustrates the data provided by the definition the equivalent the grammatical collocational and pragmatic items but also provides valuable complementary information on the use of each lexical unit described Examples are models with which users can form other sentences but are also instantiations of the language that escape systematicity and reflect unpredictable but real uses Theoretical reflection on the theory of the example with special emphasis on the bilingual analysis of how especially bilingual dictionaries present examples and what kind of information each type of example

provides can assist lexicographers in planning their dictionaries and making theoretically based choices when it comes to the selection and presentation of examples **Computational Dependency Theory** IOS Press,2013-12-03 Dependencies directed labeled graph structures representing hierarchical relations between morphemes words and semantic units are the standard representation in many fields of computational linguistics The linguistic significance of these structures often remains vague however and those working in the field stress the need for the development of a common notational and formal basis Although dependency analysis has become quasi hegemonic in Natural Language Processing NLP the connection between computational linguistics and dependency linguists remains sporadic But theoretical dependency linguists and computational linguists have much to share This book presents papers from the International Conference on Dependency Linguistics Depling 2011 held in Barcelona Spain in September 2011 Beginning with what may be the first formal definition of dependency structure the book continues with papers covering subjects such as the interface of the syntactic structures with semantics mapping semantic structures to text surface by means of statistical language generation formalization of dependency advances in dependency parsing and the link between statistical and rule based dependency parsing This comprehensive collection gives a coherent overview of recent advances in the interplay of linguistics and natural language engineering around dependency grammars ranging from definitional challenges of syntactic functions to formal grammars tree bank development and parsing issues **Aspects of the Theory of Morphology** Igor Mel'cuk,2008-08-22 The book is dedicated to linguistic morphology and it contains a sketch of a complete morphological theory centered around a discussion of fundamental concepts such as morph vs morpheme inflectional category voice grammatical case agreement vs government suppletion relationships between linguistic signs etc the hottest issues in modern linguistics The book introduces rigorous and clear concepts necessary to describe morphological phenomena of natural languages Among other things it offers logical calculi of possible grammemes in a given category The presentation is developed in a typological perspective so that linguistic data from a large variety of languages are described and analyzed about 100 typologically very different languages The main method is deductive the concepts proposed in Aspects of the Theory of Morphology are based on a small set of indefinibilia and each concept is defined in terms of these indefinibilia and or other concepts defined previously as a result logical calculi can be constructed similar to Mendeleev s Periodical Table of Elements in chemistry Then the concept is applied to the actual linguistic data to demonstrate its validity and advantages Thus Aspects of the Theory of Morphology combines metalinguistic endeavor a system of concepts for morphology with typological and descriptive orientation It reaches out to all students of language including the border fields and applications **The International Encyclopedia of Communication Theory and Philosophy, 4 Volume Set** Klaus Bruhn Jensen,Robert T. Craig,Jefferson D. Pooley,Eric W. Rothenbuhler,2016-10-31 The International Encyclopedia of Communication Theory and Philosophy is the definitive single source reference work on the subject with state of the art and in depth scholarly reflection on key issues from leading

international experts It is available both online and in print A state of the art and in depth scholarly reflection on the key issues raised by communication covering the history systematics and practical potential of communication theory Articles by leading experts offer an unprecedented level of accuracy and balance Provides comprehensive clear entries which are both cross national and cross disciplinary in nature The Encyclopedia presents a truly international perspective with authors and positions representing not just Europe and North America but also Latin America and Asia Published both online and in print Part of The Wiley Blackwell ICA International Encyclopedias of Communication series published in conjunction with the International Communication Association Online version available at www wileyicaencyclopedia com **Causatives and Transitivity** Bernard Comrie,Maria Polinsky,1993-09-09 This volume brings together 18 typological studies of causative and related constructions transitivity voice other expressions of cause by 19 scholars from North America Western Europe and Russia The inspirations for the volume is the pioneering work on causative constructions by the Leningrad Typology Group several of the contributors have close connections to the charter members of that group others have appreciated this work from a distance The volume as a whole is based on the concept of causative constructions as embracing both morphology and syntax with an important semantic component as well In addition to general studies concerning the morpho syntactic and semantic typology and the history of causative constructions and relations to other phenomena the following individual languages are treated in detail Russian English Dutch Svan Even Korean Yukaghir Alutor Aleut Haruai Dogon Athabaskan languages The volume will be of interest to typologists to other linguists interested in causative constructions and transitivity relations and to all who are interested in the linguistic expression of causal relations **Theory and practice of corpus-based semantics** Nikola Dobric,2013-11-29 **German Expressionism in the Audiovisual Culture / Der deutsche Expressionismus in den Audiovisuellen Medien** Paloma Ortiz-de-Urbina,2022-12-19 Zu Beginn des 20 Jahrhunderts machte zeitgleich mit dem Expressionismus eine neue Kunstform ihre ersten Schritte die Bild Sprache und Musik in sich vereinte der Kinofilm In Deutschland hatte die expressionistische sthetik einen enormen Einfluss auf dieses neue Medium der sich in Filmen wie Das Cabinet des Dr Caligari 1920 Der Golem 1920 Nosferatu 1922 oder Metropolis 1927 zeigt und bis heute seine Spuren hinterlassen hat Dieser Band analysiert wie Themen Motive Mythen und sthetik des expressionistischen Kinos der 1920er Jahre in den audiovisuellen Medien bis ins 21 Jahrhundert fortwirken und welchen Einfluss sie auf Myth Criticism oder auf popul re Gattungen wie Fantasy Horror oder Science Fiction nach wie vor aus ben

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