

## Proceedings of the 5<sup>th</sup> International Workshop on Linguistically Interpreted Corpora

August 29th 2004

# 20<sup>th</sup> International Conference on Computational Linguistics

#### Editorial

Large linguistically interpreted corpora continue to play an important role for machine learning, evaluation, psycholinguistics, and (increasingly so) theoretical linguistics. Many research groups are engaged in the creation of corpus resources annotated with morphological, syntactic, semantic, and discourse information for an ever-increasing variety of languages. Since 1999, the LINC workshop series has brought together these activities in order to identify and disseminate best practice in the development and utilization of linguistically interpreted corpora. LINC workshops, thus, have traditionally served a dual purpose, viz. to (i) present an up-to-date survey of ongoing work on linguistically interpreted corpora and (ii) facilitate the exchange, propagation, and further development of research results with respect to the annotation, conversion, and exploitation of such corpora. We hope to continue this tradition at LINC-04, as a postconference workshop at COLING 2004.

The call for papers this year encouraged, among others, experience reports on the use of linguistically interpreted corpora, e.g. for larger-scale, data-driven linguistic discovery, as training material for grammar acquisition and other machine learning approaches, and for the diagnostics and evaluation of NLP technology. In our view, all of the above reflect an emerging tendency in our field, viz. the growing availability of linguistically interpreted corpora combined with an increasing recognition of their utility for theoretical linguists and language engineers alike. At the same time, we observe new and continued initiatives on creating annotated resources for additional languages, as well as ongoing work to both enlarge available data sets and refine and augment existing linguistic annotations. The production, distribution, and maintenance of re-usable linguistically interpreted corpora is a process that requires sustained efforts (and funding) over time.

Finally, another emerging tendency in the field of corpus annotation appears to be in the growing connection of linguistically annotated corpora to independently developed resources, specifically broad-coverage computational grammars and parsing systems. Where only a few years ago, say, a majority of researchers may have perceived corpus annotation as an alternative paradigm to more traditional grammar writing approaches—i.e. shifting focus from linguistic introspection to the analysis of 'naturally occuring' data, thus having to confront a potentially much broader range of 'representative' phenomena—today, grammar building and corpus creation seem to not only co-exist but mutually benefit each other. Analysis (and, to a lesser extent still, generation) systems based on hand-constructed, symbolic grammars now standardly incorporate ambiguity management facilities that are derived from training stochastic models on linguistically annotated corpora; and more recently, such grammars themselves are put to use to aid annotation, both to reduce the cost of corpus construction but also to increase the granularity of available annotation and internal coherence of linguistically interpreted corpora. We have invited Prof. Rob Malouf of San Diego State University (CA) and formerly Rijksuniversiteit Groningen (The Netherlands) to reflect on this development in a topical presentation.

Like in the preceding years, broad interest in the LINC workshop was attested by a fair number of submissions: with the help of the programme committee and a number of added reviewers (see next page) the editors had to select one out of two papers for presentation during the workshop. We are indebted to everyone who submitted their work to the workshop, our numerous colleagues who assisted in the selection process (on a tight schedule), the contributors to this volume for their fine cooperation, and the COLING workshop programme committee—in particular Michael Hess and Fabio Rinaldi for their outstanding balance of precision and flexibility. In order to best achieve both of the aforementioned workshop goals in a one-day schedule, we opted for a mixed set-up, combining plenary presentations, discussions, and a slightly more informal poster session.

Oslo & Saarbrücken, June 2004

Silvia Hansen-Schirra, Stephan Oepen, and Hans Uszkoreit

#### **Program Committee**

- Francis Bond, Kyoto
- Pierrette Bouillon, Geneva
- Thorsten Brants, Mountain View
- John Carroll, Sussex
- Tomaz Erjavec, Ljubljana
- Dan Flickinger, Stanford
- Silvia Hansen-Schirra (co-chair), Saarbrücken
- Frank Keller, Edinburgh
- Brigitte Krenn, Vienna
- Joakim Nivre, Växjö
- Stephan Oepen (co-chair), Oslo & Stanford
- Laurent Romary, Nancy
- Geoffrey Sampson, Sussex
- Kiril Simov, Sofia
- Hans Uszkoreit (co-chair), Saarbrücken
- Jean Veronis, Aix-en-Provence
- Atro Voutilainen, Helsinki
- Jakub Zavrel, Antwerp

#### **Additional Reviewing**

- Stella Neumann, Saarbrücken
- Andreas Eisele, Saarbrücken
- Valia Kordoni, Saarbrücken
- Gregor Erbach, Saarbrücken
- Nuria Bertomeu, Saarbrücken
- Frederik Fouvry, Saarbrücken
- Michaela Mahlberg, Saarbrücken

#### 5th International Workshop on

### Linguistically Interpreted Corpora (LINC-04)

#### Geneva, 29 August 2004

9:00 – 9:15	Welcome & Introduction Silvia Hansen-Schirra, Stephan Oepen, and Hans Uszkoreit
9:15 – 9:45	The HOLJ Corpus. Supporting Summarisation of Legal Texts Claire Grover, Ben Hachey, and Ian Hughson
9:45 – 10:15	Towards User-Adaptive Annotation Guidelines Stefanie Dipper, Michael Goetze, Stavros Skopeteas
10:15 – 10:45	The TIGER Dependency Bank Martin Forst, Nuria Bertomeu, Berthold Crysmann, Frederik Fouvry, Silvia Hansen-Schirra, and Valia Kordoni
11:00 – 11:30	Coffee Break
11:30 – 12:00	Word Order Variation in German Main Clauses Andrea Weber and Karin Mueller
12:00 - 12:30	Inflectional Syncretism and Corpora Dunstan Brown, Carole Tiberius, and Greville G. Corbett
12:30 – 13:00	Corpus-based Induction of an LFG Syntax-Semantics Interface for Frame Semantic Processing Anette Frank and Jiri Semecky
13:00 - 14:00	Lunch Break
14:00 – 15:00	Mining Corpora for Linguistic Insights (Invited Presentation) Rob Malouf, San Diego State University (CA)
15:00 - 15:30	Discussion
15:30 - 16:00	Coffee Break
16:00 – 17:00	The Hinoki Treebank. Working Toward Text Understanding Francis Bond, Sanae Fujita, Chikara Hashimoto, Kaname Kasahara, Shigeko Nariyama, Eric Nichols, Akira Ohtani, Takaaki Tanaka, and Shigeaki Amano The Szeged Corpus. <u>A POS Tagged and Syntactically Annotated Hungarian Natural Language Corpus</u> Dora Csendes, Janos Csirik, and Tibor Gyimothy <u>Mining Linguistically Interpreted Texts</u> Cassiana Fagundes da Silva, Renata Vieira, Fernando Santos Osorio, and Paulo Quaresma <u>Automated Induction of Sense in Context</u> James Pustejovsky, Patrick Hanks, and Anna Rumshisky
17:00 – 17:30	Bootstrapping Parallel Treebanks Martin Volk and Yvonne Samuelsson
17:30 – 18:00	Discussion

#### **Table of Contents**

Editorial Silvia Hansen-Schirra, Stephan Oepen, and Hans Uszkoreit	3
The Hinoki Treebank. Working Toward Text Understanding Francis Bond, Sanae Fujita, Chikara Hashimoto, Kaname Kasahara, Shigeko Nariyama, Eric Nichols, Akira Ohtani, Takaaki Tanaka, and Shigeaki Amano	7
Inflectional Syncretism and Corpora Dunstan Brown, Carole Tiberius, and Greville G. Corbett	11
The Szeged Corpus. A POS Tagged and Syntactically Annotated Hungarian Natural Language Corpus Dora Csendes, Janos Csirik, and Tibor Gyimothy	19
Towards User-Adaptive Annotation Guidelines Stefanie Dipper, Michael Goetze, and Stavros Skopeteas	23
Towards a Dependency-Based Gold Standard for German Parsers. The TIGER Dependency Bank Martin Forst, Nuria Bertomeu, Berthold Crysmann, Frederik Fouvry, Silvia Hansen-Schirra, and Valia Kordoni	31
Corpus-based Induction of an LFG Syntax – Semantics Interface for Frame Semantic Processing Anette Frank and Jiri Semecky	39
The HOLJ Corpus. Supporting Summarisation of Legal Texts Claire Grover, Ben Hachey, and Ian Hughson	47
Automated Induction of Sense in Context James Pustejovsky, Patrick Hanks, and Anna Rumshisky	55
Mining Linguistically Interpreted Texts Cassiana Fagundes da Silva, Renata Vieira, Fernando Santos Osorio, and Paulo Quaresma	59
Bootstrapping Parallel Treebanks Martin Volk and Yvonne Samuelsson	63
Word Order Variation in German Main Clauses Andrea Weber and Karin Mueller	71

#### **Author Index**

Shigeaki Amano	11
Nuria Bertomeu	35
Francis Bond	11
Dunstan Brown	15
Greville G. Corbett	15
Berthold Crysmann	35
Dora Csendes	23
Janos Csirik	23
Stefanie Dipper	27
Martin Forst	35
Frederik Fouvry	35
Anette Frank	43
Sanae Fujita	11
Michael Goetze	27
Claire Grover	51
Tibor Gyimothy	23
Ben Hachey	51
Patrick Hanks	59
Silvia Hansen-Schirra	7,35
Chikara Hashimoto	11
Ian Hughson	51
Kaname Kasahara	11
Valia Kordoni	35
Karin Mueller	75
Shigeko Nariyama	11
Eric Nichols	11
Stephan Oepen	7
Akira Ohtani	11
Fernando Santos Osorio	63
James Pustejovsky	59
Paulo Quaresma	63
Anna Rumshisky	59
Yvonne Samuelsson	67
Jiri Semecky	43
Cassiana Fagundes da Silva	63
Stavros Skopeteas	27
Takaaki Tanaka	11
Carole Tiberius	15
Hans Uszkoreit	7
Renata Vieira	63
Martin Volk	67
Andrea Weber	75