

ACL 2014

**The Second Workshop on Metaphor in NLP**

**Proceedings of the Workshop**

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## Introduction

Characteristic to all areas of human activity (from poetic to ordinary to scientific) and, thus, to all types of discourse, metaphor becomes an important problem for natural language processing. Its ubiquity in language has been established in a number of corpus studies and the role it plays in human reasoning has been confirmed in psychological experiments. This makes metaphor an important research area for computational and cognitive linguistics, and its automatic identification and interpretation indispensable for any semantics-oriented NLP application.

The work on metaphor in NLP and AI started in the 1980s, providing us with a wealth of ideas on the structure and mechanisms of the phenomenon. The last decade witnessed a technological leap in natural language computation, whereby manually crafted rules gradually give way to more robust corpus-based statistical methods. This is also the case for metaphor research. In the recent years, the problem of metaphor modeling has been steadily gaining interest within the NLP community, with a growing number of approaches exploiting statistical techniques. Compared to more traditional approaches based on hand-coded knowledge, these more recent methods tend to have a wider coverage, as well as be more efficient, accurate and robust. However, even the statistical metaphor processing approaches so far often focused on a limited domain or a subset of phenomena. At the same time, recent work on computational lexical semantics and lexical acquisition techniques, as well as a wide range of NLP methods applying machine learning to open-domain semantic tasks, open many new avenues for creation of large-scale robust tools for recognition and interpretation of metaphor.

This year's workshop is the second workshop focused on modeling of metaphor using NLP techniques, following the first workshop held at NAACL 2013. The 2013 workshop turned out to be a popular event, with 28 registered participants and more people in attendance. In 2013, accepted papers dealt with metaphor annotation, features for metaphor identification, and with generalization of the techniques across languages. These themes continue to be represented in this year's workshop, along with additional foci on interpretation, applications, and relationships with related phenomena. We received 11 submissions and accepted 7, based on detailed and careful reviews by members of the Program Committee.

Two of the accepted papers deal with aspects of interpretation, such as the affect carried by the metaphor (Strzalkowski et al) and the underlying plausible reasoning mechanisms such as abduction (Ovchinnikova et al). Another theme is the application of metaphor to support creative exploration of language and ideas through a dedicated web service (Veale). Additional papers address in depth issues that are known to bear on the phenomenon of metaphor, such as abstractness and topicality. Dunn analyzes different kinds of abstractness and their relation to metaphoricity. Beigman Klebanov et al and Schulder and Hovy address the relationship between metaphor and topic of discussion. At the corpus level, Beigman Klebanov et al show that texts sharing a topic also share a substantial proportion of metaphors. At the level of a single text, Schulder and Hovy show that off-topic words are good candidates for metaphoricity. While previous studies and annotation efforts concentrated mostly on well-edited texts, Jang et al address social media, as well as the gap between metaphor annotations provided by trained annotators and by laypeople on a crowdsourcing website.

Complementing this diverse technical program, the workshop also features two invited talks. Dr. Brad Pasanek, an Assistant Professor in the English department at the University of Virginia, begins the talks at this year's workshop. Dr. Pasanek has collected, curated and analyzed a large collection of metaphors of mind used in 18th century British poetry; his book on the subject is forthcoming from Johns Hopkins University Press. His quantitative analysis of metaphor use by various authors provides a historical perspective on the notions of conventionality, novelty, and change in metaphor. In the neoclassical poetic tradition, the main virtue of a metaphor was not a strikingly fresh and original turn of thought (a property

that is often stereotypically associated with poetic metaphor), but rather its ability to express a common thought in a particularly apt fashion (“what oft was thought, but ne’er so well expressed”, to quote Alexander Pope). The idea of metaphors being in alignment with common ways of thinking while at the same time being noticeably different expressions of these thoughts has a complex and interesting relationship with the contemporary theories of conceptual metaphor.

Dr. Rebecca Resnik, Director of Mindwell Psychology Bethesda, completes the talks at this year’s workshop. Dr. Resnik is a Licensed Psychologist in private practice, specializing in neuropsychological and emotional assessment of children and adults, as well as psychotherapy. The way people describe their experiences represents a pattern recognition task for clinicians, one that is at times enshrined in assessment tools (e.g., the Vanderbilt scale that asks if a child appears to be “driven by a motor”). The use of metaphor, for instance in identifying cognitive distortions and automatic negative thoughts, holds much interest for the clinical community. In exploring the relationship between metaphor and clinical diagnosis, Dr. Resnik offers a unique outlook on potential applications of metaphor-related technology.

Adjourning the workshop, a panel discussion is held to help elucidate the goals and directions of further research on metaphor in NLP. Panelists include Prof. Jerry Hobbs, University of Southern California and Dr. Tony Veale, University College Dublin.

We wish to thank everyone who showed interest and submitted a paper, all of the authors for their contributions, the members of the Program Committee for their thoughtful reviews, the invited speaker and panelists for sharing their perspectives on the topic, and all the attendees of the workshop. All of these factors contribute to a truly enriching event!

Workshop co-chairs:

Beata Beigman Klebanov, Educational Testing Service, USA  
Ekaterina Shutova, University of California at Berkeley, USA  
Patricia Lichtenstein, University of California at Merced, USA

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**Invited Speakers:**

Brad Pasanek, University of Virginia, USA  
Rebecca Resnik, Mindwell Psychology, USA

**Panelists:**

Jerry Hobbs, University of Southern California, USA  
Tony Veale, University College Dublin, Ireland

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# Conference Program

**Thursday, June 26, 2014**

9:00–9:05      Opening Remarks

9:05–10:00    Invited talk: Brad Pasanek "Giving Back the Image of the Mind: Computational Approaches to 'Propriety' in Eighteenth-Century British Literature"

10:00–10:30    *Conversational Metaphors in Use: Exploring the Contrast between Technical and Everyday Notions of Metaphor*  
Hyeju Jang, Mario Piergallini, Miaomiao Wen and Carolyn Rose

10:30–11:00    Coffee Break

11:00–11:30    *Different Texts, Same Metaphors: Unigrams and Beyond*  
Beata Beigman Klebanov, Chee Wee Leong, Michael Heilman and Michael Flor

11:30–12:00    *Metaphor Detection through Term Relevance*  
Marc Schulder and Eduard Hovy

12:00–12:30    *Multi-dimensional abstractness in cross-domain mappings*  
Jonathan Dunn

**Thursday, June 26, 2014 (continued)**

12:30–14:00 Lunch

14:00–14:30 *Abductive Inference for Interpretation of Metaphors*

Ekaterina Ovchinnikova, Ross Israel, Suzanne Wertheim, Vladimir Zaytsev, Niloofar Montazeri and Jerry Hobbs

14:30–15:00 *Computing Affect in Metaphors*

Tomek Strzalkowski, Samira Shaikh, Kit Cho, George Aaron Broadwell, Laurie Feldman, Sarah Taylor, Boris Yamrom, Ting Liu, Ignacio Cases, Yuliya Peshkova and Kyle Elliot

15:00–15:30 *A Service-Oriented Architecture for Metaphor Processing*

Tony Veale

15:30–15:45 Coffee Break

15:45–16:30 Invited talk: Rebecca Resnik "Pandora's Box: Uses of metaphor in clinical psychology and computational linguistics"

16:30–17:30 Panel discussion: "Metaphors We Work On: Goals, Trajectories and Applications"