



LUND UNIVERSITY



**The 6th conference of the Scandinavian
Association for Language and Cognition**



BOOK OF ABSTRACTS

The 6th conference of the Scandinavian Association for Language and Cognition

20-22 April 2017

Centre for Languages and Literature

Lund University

Practical Information

Lund and Lund University

Situated in the Öresund region in southern Sweden, Lund is one of the oldest cities in Scandinavia, going back more than a thousand years. Over the centuries it has earned a reputation for being a place where people meet. Today, more than ever, Lund is a meeting place for ideas. The university and science-park, its multicultural atmosphere and historical surroundings make up a unique combination, both nationally and internationally. Founded in 1666, Lund University is today one of the largest, oldest and broadest universities in Scandinavia and is consistently ranked among the world's top 100 universities. Lund University has an excellent academic reputation with a large number of visiting professors and international students.

Språk- och litteraturcentrum (SOL) “Centre for Languages and Literature”

SALC6 takes place at SOL, which was established on January 1, 2006, combining the staff and students of the separate departments of the former section for languages, linguistics and literature. Currently there is a staff of some 250 and 3000 students, including 100 PhD students. The conference will take place in 4 rooms on the first floor of Humanisthuset (see the map): The Auditorium (“Hörsal”), room H140, room H135a and room H135b.

Registration desk and book tables

The registration desk is at the main entrance of SOL and will be open from Wednesday April 19, 5 to 7pm for advanced registration, and all during the conference. On registration, you will receive a conference folder with material, and a badge. Please carry your badges at all times – they will be necessary for attending talks and fika (“coffee/tea + something to go with it”).

Språk- och litteraturcentrum



Oral presentations and posters

Oral presentations should last 20 minutes followed by 5 minutes for questions (leaving 5 minutes for transitions between rooms). There will be computers and projectors in each room. Speakers are asked to go to the room where their talk will be presented well in advance, and make sure that their presentation is uploaded. If you wish to use your own laptop, you should also try it out in advance. Mac users should bring the necessary adaptors.

The poster session will take place 18:00-20:00 on Thursday, 20 April, during the Wine Reception. Each presenter will have up to three minutes to present their work orally to the audience. Posters should be hung between 15:00 and 18:00 on the same day, and removed by the end of the day.

Coffee breaks, lunches and wine reception

Fika will be served in front of Hörsal during every break. Lunches will be served in two places: in the main lobby and in the middle of Absalon (see map). Remember to carry your badges! On Saturday, lunches will be served in the main lobby for all before the closing plenary. You will find three lunch tickets in your folder.

The Wine Reception on Thursday 6-8 pm will be in the main lobby of SOL, and will be free of charge. You will find two tickets for a glass of wine each in your folder.

Conference dinner



The official conference dinner will take place at Bryggan Kök & Café, on April 21, from 7 to 10 pm (but can continue longer...). There will good food, drink and live music! It is a 15-minute walk uphill from the conference site, and situated at Sölvegatan 16 (see the map in your folder). There will be guided walks starting from SOL at 18:30, for those who wish.



Table of Contents

Plenary talks.....	5
Theme sessions.....	11
Parallel sessions.....	21
Poster sessions.....	79



LUND UNIVERSITY



The 6th conference of the Scandinavian Association for Language and Cognition

Plenary Talks

The perception and cognition of opposites

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Since time immemorial, it has been recognized in various scientific domains that opposition/contrariety (here used as interchangeable terms) represent a primal relationship in the human cognitive architecture. Early philosophers discussed its fundamental role for many concepts (e.g. pre-socratic philosophers and Aristotle). Since the 1970s, both linguists and psycholinguists have emphasized its significance, and a great deal of time has been devoted to the study of antonyms as a special semantic relationship. Contrariety is still the subject of a good deal of research (e.g. Jones et al., 2012; Kelso & Engström, 2006; Paradis et al., 2015; van de Weijer et al., 2014).

This presentation focuses on an ongoing research program within the field of Psychology, which develops Aristotle's observation that every variation is within opposites (Cat. 5, 4a 30-34). This new approach to opposition is firmly based in perception and the issue in question concerns whether the special status of what has up to now been considered a lexical or semantic relationship derives from the fact that contraries are grounded in perceptual structures. The theoretical and methodological frameworks used in this approach pertain to Experimental Phenomenology of Perception and involve rigorous experimental investigation of the basic structures of human direct (inter-observable) experience.

Many aspects have been investigated, from the perception of spatial properties in ecological environments (Bianchi et al., 2011a; 2013) to the recognition of contrary patterns in simple visual and acoustic configurations (Bianchi & Savardi, 2008a), mirror reflections (Bianchi et al., 2008b; Savardi et al., 2010) and human gestures (Bianchi et al., 2014). Evidence of a direct link between experiences of space and experiences of contrariety has been found. The results emerging from studies in the field of perception have also been extended to other areas of spatial cognition. For example, the role of contraries in divergent thinking in insight problem solving has been investigated (Branchini et al., 2015, 2016) as has whether perceptual assessment of the structures of opposites can assist in modelling contrast in the understanding of negation (Bianchi et al., 2011b), humour (Canestrari & Bianchi, 2013, 2014) and irony (Cori et al., 2016). In a medical context, spontaneous understanding (in terms of opposites) of one's health's condition and the risks and commitments involved in treatments have also been studied (Bianchi et al., submitted).

The main findings, new questions and the potential for collaborative research or panels inspired by this innovative approach are discussed. The basic thought-provoking question that the presentation aims to stimulate concerns whether a multidisciplinary, comprehensive approach to "contraries/opposites" going beyond disciplinary boundaries that up to now have limited research on this issue will allow cognitive scientists to discover something new about the cognitive roots of this special relationship which has been recognized for so long as being fundamental to human cognition.

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Much more than motion events: theoretical and applied challenges

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In this talk, we give a short overview some of the work carried out within the project MovEs II. This project is devoted to the study of motion and space from a semantic typological perspective and across several languages. After a general introduction about the project (goals, methodology, etc.), we focus on two main areas of our research. Firstly, we discuss the importance of variation and less studied linguistic phenomena for semantic typology with particular attention to their impact on SLA. Secondly, we use two corpora of specific texts dealing with wine and architecture in order to address the need to use a discourse, genre approach in typological research.

Ideophones and iconicity at the confluence of culture, cognition and communication

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Recent decades have seen an upsurge in work on ideophones (vivid sensory words also known as expressives or mimetics), in parallel with a broader interest in sensory language, lexical iconicity and sound symbolism (Lockwood and Dingemans 2015; Svantesson 2017). Although a consensus appears to be forming about the function of iconicity (for learning new words) and about effective ways to study it (using pseudowords in highly constrained tasks), I make the case that there is more to be learned from ideophones in natural languages. To do so, I combine fieldwork data from Siwu, a Kwa language spoken in Eastern Ghana, with experimental findings and corpus data from a range of natural languages. I start by discussing work on sensory language and its cultural elaboration. Typologies based on verbs for perception have found evidence for the cross-cultural primacy of vision, followed in most societies by hearing (Viberg 1984; San Roque et al. 2015). However, the rank order is quite sensitive to what is included: if we consider the lexical frequency of ideophones, the rank order for Siwu would have touch first, followed by hearing, vision, interoception and taste. So ideophones — a major lexical class in many languages — appear to provide room for culture-specific patterns of sensory elaboration. At the same time, they are shaped and constrained by cognitive processes and communicative factors. With regard to cognitive processes, I explore how ideophones bring to life sensory imagery. Experimental and corpus evidence from Japanese, Korean, Siwu and several other languages shows that ideophones are most effective when speech sounds, word form, prosody and gestures conspire to evoke aspects of the multidimensional structure of sensory experience (Ahlner and Zlatev 2010). Turning to communicative aspects, I argue that we may have missed some key functions of iconicity by focusing only on narratives (a favourite data source for field linguists) and on novel word learning (a favourite experimental task for psycholinguists). In everyday conversation, ideophones fulfil a wide range of uses, from evoking events in stories to calibrating perceptual knowledge during joint work, and from conveying personal perceptual experiences to teasing and joking about appearances. These functions recur in language after language, and they all revolve around the power of ideophones to depict sensory scenes through perceptual analogies. The possibility arises that ideophones are not just there to jumpstart word learning or to embellish stories, but as vivid and versatile communicative tools in and of themselves.

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What's your philosophy? The phenomenological tradition and Cognitive Linguistics

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Picking up the thread of Geeraerts 1985: 309-370, and Geeraerts 1993, which were the first publications in the history of Cognitive Linguistics to analyze the specific relevance of phenomenology, this talk will offer a couple of footnotes to the current Cognitive Linguistic interest in phenomenology, as embodied by works such as Zlatev et al. 2008, Zlatev 2010. In particular, it will be argued that a recourse to phenomenology as a methodological bedrock for Cognitive Linguistics is not immune to some of the issues that loom large in the philosophical history of phenomenology. First, the method of phenomenological reduction is sensitive to an idealistic shift, as Husserl's work illustrates. As such, it may be a less reliable methodological basis than suggested. Second, the phenomenological tradition is not a homogeneous one. The internal variety – the tensions, splits, and divergencies from Husserl over Heidegger and Merleau Ponty to Gadamer and Levinas – of philosophical phenomenology should be included in the discussion to arrive at a proper understanding of the relationship with Cognitive Linguistics. The outspoken tension, for instance, between the corporality of intentionality emphasized by the early Merleau Ponty and the historicity of experience in Heidegger illustrates that defining the exact relationship between experience and usage on the one hand, and system and community on the other, is just as much a problem for phenomenology as for linguistics.

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Metaphor and the automatic mind

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When people produce or understand verbal metaphors, and metaphoric gestures, do they do so automatically or with conscious deliberation? Metaphor scholars widely recognize that the answer to this question depends on several factors, including the specific kind of metaphor that was produced or understood. But many scholars assume that the automatic use of metaphor involve the simple retrieval of its figurative meaning without having to draw any cross-domain mappings. I will argue that automaticity in behavior, such as when using verbal metaphors, actually involves many complex embodied and conceptual processes, even if these may operate quickly and without conscious attention. My talk reviews the evidence for this claim, and considers other attempts to explore automaticity in metaphoric experiences such as in 20th-century automatic writing practices. My general argument provides another set of reasons, from cognitive science research, to reject simplistic assumptions that automatic metaphor behavior is necessarily different in kind from more conscious metaphor use and understanding.

Ungrounding Symbols in Development

Joanna Rączaszek-Leonardi

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The symbol grounding problem has been challenging cognitive sciences for several decades. Its difficulty might stem from the way it is posed: the problem is how to ground abstract, arbitrary, formal symbols, the existence of which is assumed. In the truly embodied approaches to cognition this assumption is not obvious. Symbol vehicles are produced in dynamical interactions, inextricable from other multimodal behaviors and real dynamical events. The problem becomes how they ever become symbolic, i.e., in certain aspects independent from the ongoing dynamics of interaction; how they become arbitrary, abstract and acquire formal properties. In other words, in truly embodied approaches to cognition we face the ungrounding problem.

Language development is a particularly opportune domain to trace the ungrounding process: it happens all the time and it is there for us to observe and measure. From very early on infants are immersed in rich multimodal coaction with caregivers, with language always present as part of this coaction. At some point in development the utterances, however, begin to differ from other behaviors in their control powers for interaction and gain their fully symbolic nature and potential.

In this talk we propose that a helpful approach to trace ungrounding process can be forged by integrating the dynamical systems perspective on control in living systems (Pattee, 1969, 1982; Rączaszek-Leonardi, 2016; Rączaszek-Leonardi & Kelso, 2008) with Deacon's view of the semiotic structure of symbolic reference (Deacon, 1998, 2011). Dynamical systems approach provides a viable connection between informational structures and dynamics, in which the former are constraints for the latter, while the semiotic perspective allows for nuancing the kinds of constraints and clarifying the semiotic infrastructure, which scaffolds and maintains symbolic functioning. I will illustrate how this integrated approach may begin to give justice to the complexity of the process of symbol emergence in development, lead to novel hypotheses about the way it unfolds, and provide methods for testing those hypotheses.

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Theme Sessions

Theme session: *Metaphor and (Un)consciousness*

What does it take to be conscious of metaphor and irony?

Herbert Colston

Imagine how a pre-linguistic human ancestor might have thought about metaphor or irony. Would they have any ability to become conscious of these phenomena? If so, would they have a greater tendency toward being aware of one or the other? Why might this be? What might it tell us about the underlying nature of metaphor and irony? A key catalyst in the development of cognitive linguistics was the initial proposal, still debated, that metaphors are not merely linguistic, but are also more deeply conceptual or cognitive (Lakoff, 1981; Gibbs, in press). Irony, conversely, has long been recognized as something that can be linguistic, in the form of verbal irony. But irony can also take a more a-linguistic or cognitive form in situational irony, where the difficult-to-define characteristic of ironic can apply to situations in the world we can cognitively appreciate without language necessarily being involved (see Gibbs & Colston, 2007). The purported two kinds of metaphor, linguistic and conceptual are also inherently connected, or at least are so-claimed (i.e., we speak metaphorically because we conceptualize of things metaphorically [i.e., “I see what you mean” & UNDERSTANDING IS SEEING]). Whether the different instantiations of irony are similarly connected, however, is as yet unclear (i.e., we can speak ironically because we can cognize irony [Colston, forthcoming]). Regardless of these possible connections, though, the relative lateness itself in the appearance of the idea conceptual metaphor, compared to that of situational irony, may be relevant to the current proposed theme session on metaphor and consciousness. Is the earlier scholarly recognition of situational irony relative to conceptual metaphor, revealing a difference in the relationship between consciousness and metaphor versus that between consciousness and irony? The proposed presentation will discuss potential differences in peoples’ ability to become aware of or conscious about metaphor and irony when encountered outside their linguistic instantiations. What such differences might mean for current understanding of metaphor and irony as phenomena, including the role embodiment plays, and how metaphor and irony have developed and proliferated will also be considered. Potential impacts such differences might hold for theoretical accounts of irony and metaphor will be discussed. Finally, some suggestions for how to empirically approach these questions will be offered.

Minds as (Introspectible) Containers? Demonstrating a New Minimal-Analogy Approach to Extended Metaphor

Eugen Fischer and John Barnden

We develop work from AI to expose seductive fallacies in metaphorical reasoning about cognitive faculties. These fallacies motivate influential Cartesian conceptions of mind as introspectible space that extend the range of conscious awareness in folk theories further than current psychology allows. We deploy a **minimal-analogy** approach to re-analyse spatial metaphors as realised in English mind-talk – with surprising results about the involvement of the notion of “mind” itself. Most computationally specific models of analogy employ **analogy-maximising** mapping strategies (Hodgetts et al. 2009). Structure-mapping theory extended this approach to metaphor interpretation (Gentner & Bowdle 2008, Wolff & Gentner 2011), explaining how unfamiliar metaphors get processed (Bowdle & Gentner 2005). Such maximising approaches can be employed to generate comprehensive mappings of the sort envisaged by standard conceptual metaphor theory (CMT) (Lakoff & Johnson 1980, Gibbs 2011). They compete with **analogy-minimising** models, notably ATT-Meta (Barnden 2001, 2015). ATT-Meta envisages analogical inferences with few core mappings, abetted by open-ended source-domain reasoning and some domain-neutral mapping operations. We present an ATT-Meta version whose source-domain reasoning exploits only semantic and stereotypical inferences actually made in word comprehension (Hare et al. 2009, Harmon-Vukic et al. 2009, McRae et al. 2005). This further reduces the range of mappings required, giving us a “Minimal Analogy Theory” (MAT). We consider ordinary “mind”-talk expressions combining ‘to/from/in (the) mind’ with verbs ‘come’, ‘cross’, ‘bring’, ‘keep’, ‘banish’, etc., used to speak of thinking-of, remembering, etc. We show that MAT can generate their richest interpretations in standard dictionaries. CMT-ists have taken these expressions to realise the conceptual metaphor MIND AS CONTAINER (Lakoff & Johnson 1980; Gibbs & O’Brien 1990). The MAT reanalysis shows that, instead, they realise BEING

THOUGHT OF AS BEING IN A PERSONAL SPACE — notably, **the "mind" does not figure in any of the mappings**. We thus explain how introspective conceptions of mind can result from using an unnecessary mind-container mapping, together with vision-cognition metaphors including THINKING-ABOUT AS LOOKING-AT (Fischer 2014, 2015). We thereby help to debunk intuitive introspective conceptions.

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The Paradox of Metaphor and the Varieties of Conscious Experience

Ray Gibbs

The great American poet Wallace Stevens once wrote, "Reality is a cliché from which we escape by metaphor." This aphorism nicely captures one impression many people have when encountering metaphor -- We feel a sense of transcendence beyond the ordinary that sometimes takes us to unknown worlds. But the paradox of metaphor is that it can indeed often have transcendent qualities yet is also deeply grounded in bodily experience and is a fundamental part of how we routinely understand many aspects of our very ordinary lives. My talk will explore this paradox and describe some of ways that metaphor touches on our conscious experiences, ranging from automatic bodily sensations and conceptualizations to more reflective ponderings of new ideas and understandings. A significant focus here concerns what we mean by "consciousness" and "conscious experience." I will argue, in line with much contemporary research within psychology and cognitive science, that conscious experience emerges at multiple time-scales of our phenomenological lives, and need not be simply linked to full-blown thoughtful awareness. My aim is to provide a more comprehensive view of the metaphorical experience that is not simply divided between the presumed, yet inaccurate, "automatic" and "conscious" or "deliberate" parts of mind.

Modeling metaphor and consciousness: A view from DMT

Gerard Steen

I have argued that deliberate metaphor affords conscious metaphorical cognition (Steen, 2013). This distinction between deliberate metaphor use versus conscious metaphor use emerged from the just criticism of their conflation by Gibbs (2011; cf. Steen, 2011). In this paper I will discuss how Deliberate Metaphor Theory (DMT) sees the relation between metaphor and consciousness. Here is my argument.

1. Assuming that all discourse behavior is goal-directed and therefore intentional (e.g., Levelt, 1989; Clark, 1996), all language use, including metaphorical language use, is also intentional (cf. Sperber & Wilson, 1986).
2. At the same time, all language use, including metaphorical language use, is also largely unconscious (Gibbs, 2011), and this is not a contradiction.
3. Yet some language use, including some metaphorical language use, is conscious (cf. Chafe, 1994).
4. Conscious metaphorical language use, I define as involving the language user paying attention to their own linguistic and cognitive behavior as being metaphorical (Steen, 2013).
5. This type of behavior is highly infrequent and afforded by deliberate metaphor (Steen, 2013).
6. Deliberate metaphor itself is the intentional (as defined above) use of metaphor as metaphor: it intentionally draws the recipient's attention to the source domain as a distinct domain of reference in the utterance or the discourse by presenting it as such on the basis of the structure or function of the relevant source domain expression (Steen, 2015).
7. This can be modeled as a property of the situation model for the utterance in the discourse and typically happens unconsciously but leads to a mental product in working memory that is in our attention (MacNamara and Magliano, 2009).
8. The (intended) discourse goal of this shift of attention between domains of reference is to affect the recipient's perspective on the target domain by making them adopt the viewpoint from the source; this can be modeled as a property of the context model for the utterance in the discourse and typically happens unconsciously, too (Macnamara and Magliano, 2009).
9. Producers and recipients can pay attention to referents without paying attention to the fact that they are doing so, in other words, without being conscious of doing so—deliberate metaphor use involves attention to the source domain but not consciousness of doing metaphor; this can also be modeled as a

property of the context model for the utterance in the discourse (Macnamara and Magliano, 2009).

10. Therefore, deliberate metaphor use is typically unconscious, as all non-deliberate metaphor use is too, but it includes attention to the source domain in the situation model, and this can afford conscious metaphorical cognition also affecting the context model.

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When Literal Meaning is Cognitively Active in Metaphor Comprehension: An Inflated Relevance-Theoretic Approach
Zsofia Zvolenszky

Dan Sperber and Deirdre Wilson have influentially argued that relevance theory's comprehension/interpretation procedure for metaphorical utterances does not require details specific to metaphor (or nonliteral discourse). Instead, the same type of comprehension procedure as that in place for literal utterances covers metaphors as well. Call this their deflationary conclusion about interpreting metaphors. Two of Sperber and Wilson's central reasons for maintaining the deflationary conclusion are: (i) that metaphorical utterances occupy one end of a continuum that includes literal, loose and hyperbolic utterances with no sharp boundaries in between them, and (ii), that hearers' interpretation of utterances along the continuum (be they metaphorical utterances or not) involves, first and foremost, the construction of ad hoc concepts. (An ad hoc concept is occasion-specific, gotten from a lexically encoded concept via a process of broadening or narrowing.) Call (i) and (ii), respectively, the continuum premise, and the ad hoc concept premise about interpreting metaphors.

In the talk, my aim is to provide a systematic survey of various critiques, direct and indirect, of the argument from the continuum premise and the ad hoc concept premise to the deflationary conclusion, and use the results of the survey to construct a positive proposal for how relevance-theoretic comprehension procedures should be enriched—inflated—to include metaphor-specific features. The metaphor-specific features I propose are inspired by examples of metaphorical utterances that involve a degree of conscious control, evidenced in part by the literal meaning remaining cognitively active (these examples are crucially different from the recurring examples in relevance theory, like 'My chiropractor is a magician', widely used to motivate the two premises about a continuum and ad hoc concept construction).

My aim is ultimately to retain a relevance-theoretic framework for interpreting utterances, but do so while giving up the deflationary conclusion as well as the ad hoc concept premise.

My positive proposal focuses on accounting for metaphorical utterances that have, until recent work by Robin Carston, received lesser dedicated attention in the relevance theoretic literature: utterances that (a) prominently involve slower, more consciously controlled, reflective processing, in which (b) the literal meaning remains cognitively active, (c) mental images play a central role, and (d) the process of constructing ad hoc concepts does not, by itself, yield a satisfactory model of comprehension.

Theme session: *Opposites in language and cognition*

Can contraries facilitate insight solutions in problem solving? (Theme session: “Opposites in language and cognition”)

Erika Branchini, Ugo Savardi and Linden Ball

This presentation discusses recent evidence supporting the hypothesis that contrast/contrariety/opposition facilitates visuo-spatial problem solving processes by prompting problem solvers to focus, at different moments, on one or more aspects of a problem and to consider whether the state of things is as they mentally visualize it or if the solution might require transforming this state into its opposite. In the first part of the presentation we briefly review studies that have discussed or empirically tested the role of counterfactual reasoning in cognitive abilities (Juhos et al., 2015; Murray & Byrne, 2013), such as inductive and deductive reasoning (Evans 2002, 2007), hypothesis testing (Gale & Ball, 2009, 2012) and creative and divergent thinking as applied to problem-solving (Alexander, 2012; Rothenberg, 1996). In the second part of the presentation, we focus on the results of two studies aimed at testing whether providing contraries as an implicit hint (Branchini et al., 2015) or as an explicit training method (Branchini et al., 2016) would improve problem solving abilities. In both studies participants were required to analyze the spatial features of problems and verbally list them and their corresponding opposites before embarking on the search for the solution. Performance, in terms of success rates, the time needed to find the solution and behavior during the search phase, was improved in both studies. These findings are discussed with reference to the fact that a key difficulty with insight problems is that people usually encounter an “impasse” phase (i.e., a state of mind in which one does not know what to do next) resulting from the initial representation of the problem, which “constrains” the options available and thus limits the area within which the search for a solution occurs. These impasses can be overcome by a representational change (Knoblich et al., 2001; Öllinger et al., 2008) and thinking in opposites can stimulate this. The role of visuo-spatial processes versus the linguistic elicitation of opposites required by the tasks is also discussed.

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Same opposites, different processing routes and pleasing effects: the Case of Default and Nondefault Sarcasm

Rachel Giora, Shir Givoni, Vered Heruti and Ofer Fein

When presented in isolation (Experiment 1, involving 40 participants and an offline rating task), affirmatives, such as She is the smartest person around, and negative counterparts, such as She is not the smartest person around, are interpreted differently; whereas the default interpretation of the affirmatives is literal ('she is extremely bright'), the default interpretation of the negatives is sarcastic ('she is stupid'). However, when embedded in equally strong, sarcastically biasing contexts (controlled by a pretest, involving 40 participants and an offline rating task), both affirmative and negative counterparts are interpreted as equally strongly sarcastic. Still, when reading times of such equally biased items are measured, the default (negative) targets are processed faster than their nondefault (affirmative) counterparts (Experiment 2, involving 48 participants and an online self-paced reading task). Furthermore, when pleasure ratings are collected from such equally strong, sarcastically biased affirmative and negative utterances, nondefault (affirmative) sarcasm is rated as more pleasing than default (negative) sarcasm, regardless of whether contextual information is linguistic or pictorial (Experiments 3-4, involving 40 and 30 participants, respectively, including an offline rating task). Results are accounted for by the Defaultness Hypothesis (Giora, Givoni, & Fein, 2015b) and the (consequently revised version of the) Optimal Innovation Hypothesis (Giora, Givoni, Heruti, & Fein, 2017). They show that it is defaultness that accounts for all these effects, regardless of strength or type of contextual support or degree of negation (affirmation vs negation). They demonstrate that identical, equally strongly supported opposites ('stupid') may have nonetheless different effects, depending on whether their (similarly good) antonymous counterparts (not smart, smart) lend themselves to such converse interpretations by default or not. It is degree of defaultness, then, that makes a difference.

Notes

1. For the original the Optimal Innovation Hypothesis, see Giora, et al. (2015a) and Giora et al. (2004).
2. On goodness of antonymy, see e.g., Jones et al., (2007); van de Weijer et al. (2014).

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Are all opposites equal? If not, why not?

Carita Paradis and Joost van de Weijer

Opposition is a powerful relation in language and cognition – important to coherence in discourse and to how we perceive and understand the world around us. After many years of neglect, research on binary opposition in language (antonymy), has recently experienced a revival of interest (Miller & Fellbaum 1991; Murphy 2003; Giora 2006, Bianchi et al. 2011; Paradis & Willners 2011; van de Weijer et al. 2012, 2014). Here, we offer a Cognitive Semantics approach to binary opposition in language and thought. In a series of empirical investigations using a combination of corpus data, behavioural (response time experiments) and neurophysiological (ERP) techniques, we analyze (i) the nature of the category of antonymy, and (ii) the status of its members in terms of goodness of opposition in English and in Swedish. Our purpose is to synthesize these empirical investigations and provide a theoretical framework that is capable of accounting for antonymy as a mode of thought in language use and meaning-making. We focus on the intriguing questions of why some pairs are felt to be “better” antonyms than others, i.e. what the difference is between pairings such as heavy–light and hot–cold on the one hand, and most other antonymic partners such as calm–high-strung or calm–flowing on the other. Couched in the framework of Lexical Meaning as Ontologies and Construals (Paradis 2005, 2015), this contribution models antonymy as a spatial configuration construal grounded in perception and effected through a comparison of the opposing properties. Whenever we think of something as ‘long’, ‘good’ or ‘dead’, it will be in contrast to something that lacks or has little of this property, i.e. their opposites. We show that antonymy has conceptual basis, but in contrast to other lexical semantic construals, a limited number of words seem to have special status as dimensional protagonists. Configurationally, this translates into a construal that is divided into two parts. This configuration (or schema) is a necessary requirement for meanings to be used as antonyms, and viewed this way all antonyms have equal status as members. In contrast to categorization by configuration, categorization by contentful meaning structures forms a continuum ranging from strongly related pairings as core members to ad hoc couplings on the outskirts. In order to explain why some lexical semantic couplings tend to form conventionalized pairs, we appeal to their ontological set-up, the symmetry of the antonyms in relation to the boundary between the meaning structures, their contextual range of use, and their frequency.

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Theme session: *The ecology of language, cognition, and emotion in therapy*

An ecological approach to psychotherapy

Thomas Wiben Jensen, Sarah Trasmundi and Line Worsøe

In this talk we discuss the perspectives of embedding naturalistic studies of psychotherapy in an ecological framework. An ecological perspective on human behavior includes a focus on languaging, i.e. how we do language together as a form of whole-bodied behaviour or whole-bodied dialogical and coordinated sense making (Fusaroli et al 2014, Jensen 2014). Thus, attention must be paid to how individuals orchestrate the dialogical alignment of speech (Dubois 2014) with thinking and gesturing by turning to bodily dynamics and symbols (Cowley 2011, Rączaszek-Leonardi, 2011). By viewing language as ecological (Cowley 2011, Thibault 2011, Steffensen 2011), and grounded in coordinating bodies, languaging - language as first-order activity - becomes the primary unit of analysis. This perspective turns the modus operandi upside down as the symbolic and rule-governed system is viewed as a second-order construct or constraint on languaging behavior, that is: “dynamics first and symbols afterwards” (Cowley 2011:11). Further, we propose viewing emotions as intersubjective affordances in social interaction. As part of our languaging behavior emotions evaluate as well as enact relational situations in the sense that they explore the action possibilities within a given situation (Foolen et al. 2002, Colombetti 2014, Jensen and Trasmundi 2016). The choice of psychotherapy as empirical domain is motivated by the fact that therapy is a language-laden interactional achievement involving shared cognitive and emotional processes, ideally leading to short-term and longterm changes for the patient. Conversely, new questions of how psychotherapy works presuppose a new theoretical model involving (a) a systemic model of cognition, language, and emotion, and (b) a multiscale model of the interplay between fast timescales of situated inter-bodily coordination and slower timescales of socioculture, autobiographies, and multi-session therapies. An ecological approach invites multiple perspectives to capture a cross-section of different temporal dynamics in interaction. By doing so, it prioritises what patients and therapists actually do in psychotherapy as they draw on experience and engage in real-time coordination with their environment. At an empirical level this view will be applied on video recordings of psychotherapy combined with physiometric measures of heart rate, skin temperature, movement patterns (gesturing) for both patient and therapist. In particular we will focus on the enabling conditions for emotional inter-bodily coordination between patient and therapist.

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Human interaction dynamics during psychotherapy: Challenges and solutions

Travis J. Wiltshire, Johanne Stege Philipsen and Sune Vork Steffensen

Psychotherapy has been described as one of the most complex bio-psycho-social systems in which patterns of language, cognition, and emotion are formed and changed through the dynamics of therapist and patient interactions (Schiepek, Fricke, & Kaimer, 1992; Gelo & Salvatore, 2016). While there is pervasive evidence that interpersonal coordination occurs in a variety of modalities and contexts (e.g., Louwerse, Dale, Bard, & Jeuniaux, 2012), recent efforts have linked synchronization in the voice (Imel et al., 2014; Reich, Berman, Dale, & Levitt, 2014) and bodily movements (Ramseyer & Tschacher, 2011) to important therapeutic processes and psychotherapy outcomes specifically. Although, synchronization is just one of many forms of interpersonal coordination that can be examined (Butler, 2011). Thus, psychotherapy provides a rich context for investigating the self-organizing nature of human interaction dynamics in a functionally-oriented and language-centric, collaborative context (i.e., working toward remediation of the patient's disorder, problem, issues, etc.). However, because human interaction is multiscalar, spanning multiple timescales and modalities, it poses many quantitative challenges. We report on challenges and issues we face in our large scale psychotherapy project in which we have multiple physiological and interactional data (heart rate, EDA, EEG, accelerometry, bodily movement, fundamental frequency) for patient and therapist, as well as questionnaire data collected using the Synergetic Navigation System (Schiepek, Eckert, Aas, Wallot, & Wallot, 2015). We present our dynamical systems approach (e.g., Butler, 2011; Gelo & Salvatore, 2016) to analyzing multiscalar inter- and intra-personal coordination, within and across therapy sessions and how to link these with therapeutic processes and outcomes. Our main focus is to discuss how insights from this approach can contribute to a general understanding of the flow of interactivity in the embodied encounters between human agents and how this understanding of interaction dynamics can advance our knowledge of, and ways to investigate, the relationship between language and cognition.

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Parallel Sessions

The cognitive foundations of situation type (events vs. states)

Simone Alex-Ruf

Since at least the well-known work of Vendler (1957) the classification of situations concerning their internal temporal structure is part of the day-to-day business of event semantics. Furthermore, within this classification linguists have established two main categories: telic, dynamic events and atelic, non-dynamic states. But does this theoretical distinction have a cognitive equivalent? If so, what are the differences in the processing and representation of an event sentence vs. a state sentence? So far, only few studies have investigated these questions. Gennari & Poeppel (2003), for example, found longer reading times for sentences containing eventive verbs (e.g., build) than for sentences containing stative verbs (e.g., love). They explain this result by a costlier processing of events than of states, caused by the more complex semantic structure of eventive verbs (semantic complexity). In an alternative account, developed in Alex-Ruf (2016), these differences in processing effort are traced to differences between mental simulations: the simulation evoked by an event has a more complex structure than the simulation evoked by a state (simulation complexity). A crucial factor for this higher level of complexity within a simulation is motion, which is a defining component of (at least concrete) events. According to Grounded Cognition theories, the processing of a linguistic expression describing a bodily movement entails an activation of the motoric modality. Glenberg & Kaschak (2002) were among the first to provide evidence for this assumption. They established the action-sentence compatibility effect (ACE) to describe an influence of linguistically expressed bodily motion on the movement which has to be performed to give a task response. In my presentation I will illustrate in detail how the theory of differences in the complexity of mental simulations can contribute to the classification of situations in events and states. Furthermore, I will present three studies that provide evidence for this account on simulation complexity: The first experiment, a self-paced reading study with moving-window design, reveals longer reading times for event sentences than for state sentences and thus replicates the results of Gennari & Poeppel (2003). In experiment 2 and 3 the action-sentence compatibility paradigm is used. Within the results there is subtle evidence for an ACE during the processing of event sentences which imply a movement, while this is not the case with state sentences. In contrast to the study of Gennari & Poeppel, German eventive-stative-ambiguous verbs like *bedecken* (cover) and *schmücken* (decorate) are used to avoid confounding factors.

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Multimodal prominences: How eyebrow and head beats are combined with pitch accents to encode information structure in Swedish news readings

Gilbert Ambrazaitis and David House

Beat gestures have been shown to be integrated with speech at an early stage in perception, facilitating both phonological [1] and semantic processing [2]. They also align with pitch accents in speech production [3,4], and there is evidence suggesting that they are more likely to occur with perceptually strong accents than with weak ones [5]. However, it is not well understood yet whether and how the

two modalities (beat gestures, pitch accents) might interact in the encoding of different levels or types of multimodal prominence (MMP), and how such MMPs might be employed by speakers and listeners in the (de-)coding of information structure (IS). The current study attempts to approach this research question by investigating (1) how MMPs are constructed by combining eyebrow (EB) and head (HE) movements with so-called focal pitch accents (FA) in Stockholm Swedish, and (2) whether the choice of MMP or verbal- or visual-only prominence markers relates to IS. Our corpus so far consists of 31 brief news readings from Swedish Television, comprising speech from four news anchors (two female, two male) and 986 words (6 ½ minutes) in total. It was annotated for focal accents and head and eyebrow beats, independently by three annotators (Fleiss' Kappa (κ) for FA: $\kappa = 0.77$; HE: $\kappa = 0.69$; EB: $\kappa = 0.72$). Our results reveal that four types or combinations of prominence markers occur rather frequently in the corpus: FA+HE+EB (39 tokens), FA+HE (126), FA only (i.e., no gesture: 128), and HE only (58 tokens), while FA+EB (3) is pretty rare, and both HE+EB (10) and EB (15) in 70-80% of the cases occur on words directly preceding FA(+HE)-annotated words. That is, EB movements occur primarily in conjunction with both FA and HE. A preliminary functional analysis of the data has revealed the following general tendencies: (1) In almost all noun phrases (and many verbs) at least one word receives some kind of prominence. A high density of prominent words is most likely a general characteristic trait of news speech, where almost all referents represent new information. (2) In sections representing the theme of the news story, FA, HE, and FA+HE are all common prominence markers. (3) However, initial clauses, when presenting a common ground or the theme of the news story (about 2/3 of the texts), we observe a preference for using FA only for the first 2-3 prominent words of a news story. (4) Finally, EB seems to be used mainly as a kind of intensification marker (in line with [4]), and is able to cancel out the observation in (3) when occurring early in a text. The results of [5] suggest equivalent, cumulative prominence functions of head and eyebrow movements. By contrast, our results provide initial evidence for a differential usage of focal accents and head and eyebrow movements with respect to information-related factors such as common ground or intensification.

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The effects of presenting ontologic information in terms of opposites in a medical context

Ivana Bianchi, Roberto Burro and Ugo Savardi

An extensive body of literature has demonstrated that many patients do not fully understand the information provided in informed consent forms (e.g. Hietanen Aro, Holli, Absetz, 2000; Brown, et al., 2004). Comprehension is particularly limited in the case of people with a lower standard of education, even when simple language is used (Breese, Burman, Goldberg, Weis, 2007; Dresden & Levitt, 2001; Joffe et al., 2001). The way in which information is presented usually ignores the fact that humans perceive (Bianchi, Savardi & Kubovy, 2011; Kelso & Engstrøm, 2005), conceptualize (Gardenfors, 2000, 2014) and linguistically describe (e.g. Jones, Murphy, Paradis, Willners, 2011) their experiences in terms of opposites. We explore for the first time whether and how the use of opposites impacts on understanding of information communicated in an oncologic scenario, i.e. using the terms small-large to describe a nodule (i.e. bipolar communication) rather than speaking in terms of centimetres (i.e.

unidimensional communication) and speaking of common-rare side effects (i.e. bipolar communication) rather than the number of people who suffer from these side effects (i.e. unidimensional communication). Three experts analysed the contents of various standard informed consent forms and a series of videos simulating typical dialogues between doctors and patients (produced by the National Cancer Institute CRO Aviano, Italy). A list of statements was drawn up and two questionnaires were created, one presenting the information in terms of opposites (48 items), another using unipolar communication (34 items). Two participation conditions were considered in order to test whether comprehension improved in individual contexts (470 participants) or in small groups of three people (210 participants) or in both conditions. The findings demonstrated that the participants' perception of their situation in terms of feeling healthy-ill, being at high-low risk and their treatment requiring high-low commitment varied in the two cases. In both conditions, self-reported levels of understanding and satisfaction with how the information was communicated were higher when opposites were used.

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Syntactic mediation of social cognition: Complement clauses and perspective taking in children with autism

Ditte Boeg Thomsen

The complement-clause construction is a crosslinguistically widespread syntactic strategy for representing and communicating about perspectives on situations. With its embedding format, it allows speakers to present propositions that they agree or disagree with, to anchor these propositions in conceptualizers and to specify the perspectival relationship between conceptualizers and propositions, as in *dad says [it's his cake]* or *I know [it's my cake]* (Verhagen 2005). Children's sociocognitive ability to represent and reason about their own and others' mental states, i.e. what they and others believe, know and feel, undergoes substantial development at around 3-4 years of

age (Wellman et al. 2001), and de Villiers & de Villiers (2000) have proposed that language plays a causal role in this process. Specifically, de Villiers & de Villiers (2000) suggest that the complement-clause construction offers children a unique format for representing false beliefs, and this claim has found support in a line of studies with typically developing children (e.g. Hale & Tager-Flusberg 2003, Lohmann & Tomasello 2003, Low 2010). Children with autism spectrum disorders have repeatedly been found to exhibit impaired sensitivity to others' mental states (Baron-Cohen et al. 1985, Happé 1994), but also in this population, correlation studies have demonstrated a relationship between complement-clause mastery and perspective taking (Lind & Bowler 2009). The present study examines the direction of causality in this tight relationship between linguistic and sociocognitive development, investigating whether children with autism are able to use linguistic perspective marking as a tool for reasoning about divergent mental states. First, I report results from a correlation study involving 107 6-to-9-year-olds with autism or typical development, showing that complement-clause mastery is a significant predictor of advanced mental-state reasoning in both groups. Second, I present a training study including 54 children with autism assigned to two training conditions with linguistic mediation of perspectives and two control conditions without linguistic training. In the linguistic training conditions, children's perspective-taking performance improved significantly, whereas no improvement was found in the control conditions. Children trained with complement clauses advanced most, but simpler forms of linguistic perspective marking were also beneficial. Together, the two studies indicate that children with autism benefit from mastery of the complement-clause construction as a privileged tool for syntactic mediation of perspective taking.

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Cognitive aspects of translation as cross-cultural communication

Nikolay Boldyrev

Translation as viewed from the Cognitive Semantics perspective constitutes a problem of cross-cultural interpretation of the world and knowledge of the world. T.A. van Dijk argues that the relationship between knowledge of the world and language use is indirect and depends on how language speakers define the communicative event (van Dijk 2009). The isolated research in the frameworks of different perspectives (intercultural and cross-cultural communication, ethnography of communication) suggests fragmentary results of the scientific inquiries in the field. The external approach to translation as cross-cultural communication based on the importance of factors that surround a communication event has remained limited. It has insufficiently considered conceptual aspects which involve negotiation of meanings within contexts of knowledge. Cognitive Semantics, as it is seen by many scholars, studies the relationship between experience and language (Langacker 2015; Talmy 2000) and forms the basis for the Theory of Linguistic Interpretation (Boldyrev 2013, 2016). The underlying principle of the Theory of Linguistic Interpretation is exemplified in the interpretive function of language (alongside cognitive and communicative) that basically reveals anthropocentricity of language. Research into interpretive function of language involves the analysis of language use as well as interrelation between linguistic interpretation, conceptualization and categorization. Viewed from this perspective, linguistic interpretation recognizes static and dynamic processes of cognition shaping and storing overall collective and individual knowledge of language speakers. The Theory of Linguistic Interpretation ascertains three essential processes that underlie language use which may help to develop the mainstream cognitive semantics theory. They are selection, classification and evaluation as systemic processes that are activated in the mind when participants interact and negotiate meanings. Put another way, it is the human being who gets experience and interprets the world and the knowledge about it. By selecting, classifying, evaluating conceptual characteristics with conceptual content and organizing them through language, human beings reveal what they know about the world and what constitutes their worldview within which they interact with representatives of different backgrounds and do translation from one language into another. In selecting, classifying, and evaluating meanings and linguistic means of their representation in the translation process the translator should meet the challenge that the literary image of the world construed by the author of the original text is culturally situated and that this cultural specificity should be retained and perceived in the frame of the accepting culture. First, the Theory of Linguistic Interpretation examines types of knowledge in terms of contexts of collective (shared) knowledge and contexts of individual (sociocultural) knowledge that underlie language use. Second, it aims to help account for mismatches in intercultural interactions and translation. In the long run, its aim is to integrate the linguistic and sociocultural perspectives on cognitive organization in a unified understanding of human conceptual structure that is verbally represented in cross-cultural encounters, the translation being one of them.

In the talk the empirical evidence to support these assumptions will be presented by way of comparing the original extract in German and its existing translations into English and Russian.

Acknowledgements: The research is supported by the Russian Science Foundation grant, project # 15-18-10006.

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The grammar-lexicon distinction

Sarah Rosenbech Nielsen, Violaine Michel Lange, Maria Messerschmidt, Peter Harder and Kasper Boye.

This paper deals with the distinction between grammar and lexicon. It has two aims: First, to investigate the distinction through predictions made by a usage-based linguistic theory in a language production paradigm. Second, to link these findings to a neuro-biological model of grammar and lexicon. The usage-based theory by Boye & Harder (2012) conceives of grammatical elements as ancillary in relation to lexical elements. Grammatical elements are defined as elements that are by convention discursively secondary (background) and dependent on lexical elements, which are potentially discursively primary (foreground). This entails that grammatical words must be retrieved and processed at a later stage than lexical words, and furthermore that grammatical words are paid less attention to than lexical words. Ullman's (2001) neuro-biological model posits that the cognitive underpinnings of the grammar-lexicon distinction are the procedural and declarative memory systems. In this model, grammar is linked to procedural memory together with general implicit knowledge. Lexicon is on the other hand associated with declarative memory, which handles arbitrary information. We test the grammar-lexicon distinction in a minimal contrast multi-word production design using lexical verbs (full verbs) and grammatical verbs (auxiliaries). In the experiment, participants produce the verbs in sentences that are identical except for the status of the verb as lexical or grammatical. On the basis of Boye & Harder's theory we hypothesize that grammatical verbs will have longer reaction times, shorter durations and a higher error rate compared to lexical verbs. Differences between the lexical and grammatical conditions are discussed. In order to link these findings to the declarative-procedural model, we include a measure of procedural memory, namely the Serial Reaction Time Task which is said to measure implicit learning. In line with Ullman's theory, we hypothesize that procedural memory will correlate with reaction times for the grammatical condition of our experiment, but not the lexical. Correlational analysis and implications thereof are discussed.

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When word order affects word recognition

Line Burholt Kristensen and Dorothea Wendt.

There is growing evidence that auditory perception of speech is affected by other factors than acoustics (Ganong 1980, Mattys et al. 2012). Word recognition requires not only peripheral auditory processes, but is further influenced by more central auditory functions on a cognitive level. To get the full picture of a person's hearing difficulties, one should not only evaluate the ability to detect the acoustic signal, but also take cognitive abilities into account, such as the ability to understand the meaning of speech, e.g. resolving who did what to whom. Most Danish speech intelligibility tests use recordings of canonical subject-first word order and do not include object-initial sentences, thereby exposing the listeners to limited syntactic variability and complexity. However, in conversational Danish object-initial sentences are not infrequent (Boeg Thomsen & Kristensen 2014). Using a newly developed material for evaluation of speech in noise, we examine how syntactic complexity affects word recognition in background noise. It was hypothesized that the effect of noise is greater for object-initial clauses than for subject-initial ones. In our word recognition study, 26 native speakers of Danish listened to full sentences and to fragments of sentences with either a subject-verb-object (SVO) structure or an object-verb-subject structure (OVS), and were asked to repeat all words. The material consists of 39 items recorded in 4 versions, exemplified by the item below. Word order (the position of the full verb, e.g. *ae* = 'stroke') was the only cue to understanding who did what to whom.

SVO1: Det kloge pindsvin vil *ae* den søde hare ≈ 'The smart hedgehog will stroke the sweet hare'

OVS1: Det kloge pindsvin vil den søde hare æ ≈ 'The smart hedgehog, the sweet hare will stroke'
SVO2: Den søde hare vil æ det kloge pindsvin ≈ 'The sweet hare will stroke the smart hedgehog'
OVS2: Den søde hare vil det kloge pindsvin æ ≈ 'The sweet hare, the smart hedgehog will stroke'

Significant differences were found between the number of correctly repeated words per sentence for OVS (4.6 correct words) vs. SVO sentences (4.9 words). We discuss this word order effect in more detail, as well as differences between recognition of words in fragments and in full sentences.

De-polarizing ironic utterance: ironic cognition in adults and younger participants

Carla Canestrari and Ivana Bianchi

Three studies (two conducted on more than 400 Italian adults; one with 100 younger participants (aged between 12 and 15), 23 of whom were “gifted” (as assessed by IQ tests) are presented, investigating a form of verbal irony that we will call “intermediate verbal irony” (Canestrari, Bianchi & Cori, submitted; Bianchi et al, submitted; Cori, Canestrari & Bianchi, 2016). This kind of irony was identified by extending three considerations regarding human perception of contrariety (Bianchi, Savardi, & Kubovy, 2011; Bianchi, et al., 2013) to the concept of ironic contrast (e.g. Calmus & Caillies, 2014; Colston & O'Brien, 2000; Giora, 1995; Roberts & Kreuz, 1994). Firstly, any contrast necessarily lies on a specific dimensional structure, which is defined by the perceptual experience of the poles and the intermediate region. Secondly, the dimensions in most cases consist of two poles and intermediate experiences perceived as neither one pole, nor the other (e.g. neither top nor bottom; neither uphill nor downhill). Thirdly, intermediates and poles can consist of point properties or ranges. For example, uphill and downhill are range properties whereas neither uphill nor downhill is a point property; conversely, top and bottom are point properties, whereas neither at the top nor at the bottom is graded. Intermediate verbal irony occurs when polarized statements refer to situations perceived as intermediate (e.g. using “This path is all uphill!” to describe a path which is neither uphill nor downhill; or saying “There he is, right at the top!” to describe a person who is standing neither at the top nor at the bottom of a ladder), or when intermediate statements are used to refer to polarized states (e.g. “This path is neither uphill nor downhill!” said about a path which is very steep or “There he is, neither at the top nor the bottom!” about a person standing at the bottom of the ladder). The three studies demonstrated that intermediate verbal irony is understood by both adults and younger participants. The performance of gifted participants was more in line with adult performance; gifted participants manifested an explicit understanding of the identity/contrast relationship inherent to literal/ironic statements, and were able to produce new stories to suitably exemplify the rule. The results contribute to further developing the idea of “contrast” as a critical relationship for the understanding of verbal irony, from a cognitive perspective.

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With the Negev in Mind: Landscape in Language and Cognition. A Cross-generational Study on Negev Arabic.

Letizia Cerqueglini

Recent research on space tackles the effects of landscape on language and cognition (Bohnenmeyer, 2016). I approach this question comparing cognitive and linguistic data from two different varieties of Negev Arabic (NA): Traditional Negev Arabic (TNA), spoken by the elders above the age of 68, and Young Negev Arabic (YNA), whose speakers are under the age of 45 (omitting to the purpose of this presentation the intermediate stage, i.e. between the ages of 68 and 45). NA is a variety of North-Western Nomadic Hijāzi Arabic spoken in the Negev desert. As shown in Cerqueglini (2015) and Cerqueglini&Henkin (forthcoming), socio-cultural changes occurred in the last 60 years have so deeply reshaped NA spatial language as to severely prevent effective communication and mutual understanding between TNA and YNA speakers, especially as regards the criteria of selection of spatial Frames of Reference (FoRs). FoRs are cognitive and semantic strategies used to project coordinate systems onto spatial arrays in order to conceptualize and linguistically describe relations between object to be located (Figure, F) and reference object (Ground, G) where ‘direction’ (right/back/north/uphill) is a necessary component, as in: F is right/back/north/uphill of G (Talmy 2000). FoRs are of 3 types: Intrinsic – the coordinate system is centered on G’s inherent axial asymmetries; Relative – the coordinate system is derived from O(bserver); Absolute – the coordinate system is derived from external bearings, such as cardinal directions or salient landmarks (Levinson 2003). Data yielded from an extensive fieldwork show that Absolute FoR – in both TNA and YNA – is deeply embodied in the Negev landscape. TNA speakers use Absolute FoR in language and cognition. In TNA linguistic representations, it is grammaticalized by cardinal directions (šimāl=north/ janūb=south/ šarg=east/ ġarb=west), anchored both astronomically and on culturally salient landmarks (Cerqueglini&Henkin, forthcoming), depending on speech context. The same double anchoring occurs also in TNA cognition. YNA has no Absolute FoR in linguistic representations. As per YNA cognitive data: 40 years old informants can always orient themselves to Mecca from the Negev, not from Europe; 30 years old informants were requested to repeatedly draw a tent on a sheet, each time facing to a different direction: in the Negev, they always drew the entrance eastwards, while outside tests were not consistent; 15 years old pupils asked to draw Israel’s map on the board in different classes oriented in different directions, drew it according to the actual cardinal directions in their village schools, while outside the Negev, they drew it with the east rightwards as in books. To conclude, TNA uses astronomically and locally anchored Absolute FoRs in language and cognition, YNA uses only the locally anchored Absolute FoR in cognition and only when speakers are inside the native landscape. In YNA, the linguistic collapse of the Absolute FoR parallels the disappearance of its astronomically-anchored cognitive sub-type.

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Spatial metaphors for musical pitch in speech and gesture: Evidence from Swedish and Turkish
Peer Christensen and Marianne Gullberg

How are language-specific metaphors for musical pitch manifested in speech and gesture? Metaphorical expressions are common in language and proponents of Conceptual Metaphor Theory (e.g. Lakoff & Johnson, 1980) have argued that metaphors are not merely surface phenomena, but vital for how we “think” about abstract concepts. The languages of the world offer different ways of expressing pitch frequency in metaphor. In some languages (e.g. Swedish), pitch may be described as “high” or “low”, whereas other languages (e.g. Turkish) have expressions like “thick” or “thin” (e.g. Dolscheid, Shayan, Majid & Casasanto, 2013; Shayan, Ozturk & Sicoli, 2011). What is shared is a cross-domain mapping of distinct spatial attributes to sound perception. Gesture studies have further demonstrated that such mappings also appear to be reflected in speakers’ gestures accompanying metaphorical expressions (see e.g. Cienki & Müller, 2008). To better understand the conceptualisation of pitch and the production of the “height” and “thickness” metaphors from an embodied perspective, we investigated how these metaphors are used in both speech and gesture by speakers of Swedish and Turkish. We hypothesised that a) Swedish and Turkish participants would predominantly describe pitch using “height” and “thickness”, respectively; b) representational co-speech gestures would covary with the axes congruent with the spatial metaphors used in speech (i.e. vertical vs. horizontal/sagittal). We investigated these issues in a speech production task, where participants were asked to listen to a set of stimuli, each item consisting of two sung notes differing only in pitch. Participants then described each item to a confederate performing a stimulus-matching task. Preliminary results indicate that Swedish participants frequently used “height”, but also “brightness” to describe pitch, whereas Turkish participants mainly used “thickness”. However, in gesture, the two groups revealed both congruent and incongruent usage patterns. The “height” metaphor was frequently accompanied by representational gestures indicating physical height. Conversely, the “thickness” metaphor was generally not accompanied by gestures along the lateral/sagittal axes, but occasionally by gestures indicating tightness of grip. Moreover, Swedish participants using “brightness”, and Turkish participants using “thickness” often produced gestures along the vertical axis congruent with the “height” metaphor. Although preliminary results must be interpreted with caution, the observed cross-linguistic and cross-modal patterns in metaphor usage point to the need for a more complex view of how spatial metaphors are used by speakers to communicate information by means of mappings across perceptual domains.

To know or not to know. Testing the Ambiguity Hypothesis of Sapere in Italian
Roberta Colonna Dahlman and Joost van de Weijer

In linguistics and philosophy of language it is standardly assumed that know is a factive verb, meaning that a sentence such as (1)—when uttered in its positive declarative form—entails the truth of its complement:

(1) John knows that Mary lives in Sweden. A problem for this analysis is the fact that the verb know can be used non-factively in ordinary language, that is, in contexts where it is evident that the proposition expressed by the subordinate clause is not true, as shown in (2):

(2) Everyone knew that stress caused ulcers, before two Australian doctors in the early 80s proved that ulcers are actually caused by bacterial infections.
(Hazlett 2010: 501)

In order to account for the non-factive use of know, two solutions have been advanced. Hazlett (2009, 2010, 2012) proposed that know is not semantically factive and a sentence such as “X knows that p” does not entail, but pragmatically implies p. On the other hand, Tsohatzidis (2012) proposed that know is lexically ambiguous between a factive and a non-factive sense: when know is used in its factive sense, a sentence such as “X knows that p” entails p, whereas, when know occurs in

its non-factive sense, it does not. The phenomenon at issue—the possibility for a speaker to use know in cases where the proposition expressed by the clause embedded under ‘knows’ is not true—is not unique to English, but occurs, for instance, also in Italian (Colonna Dahlman 2015). We carried out a Truth Judgment Task to test whether the Italian lexical item sa ‘knows’ is ambiguous or not. Lexical ambiguities in natural language are typically disambiguated in the context of conversation. This means that, if uttered out of the blue, a sentence such as “X sa che p” ‘X knows that p’ is predicted to maintain its ambiguity and bring about a situation of semantic indecision (cf. Poesio 1996, Swinney 1979, Crain and Steedman 1985, Kurtzman and MacDonald 1993). The results showed that the participants answered equally often True and False when asked to judge target statements in which p was either true or false. Additionally, the average response time to target statements in which sapere was the main verb was significantly longer than that to control statements with a non-factive main verb. These findings, we argue, are consistent with the lexical ambiguity hypothesis, and cannot be explained by Hazlett’s pragmatic solution.

Beyond War Metaphors in Cancer Discourse

Oana David

Linguistic and discourse analytic studies in Conceptual Metaphor Theory have shed light on the metaphors that structure our understanding of cancer (Gibbs & Franks 2002). Choice of metaphor can influence the path of action and the attitudes of those affected by cancer. For instance, the way that cancer is metaphorically discussed in English – frequently either as a journey or as a war – has been shown to influence whether patients are willing to take preventative measures (Hauser & Schwartz 2014). The use of the war metaphor (e.g., battle cancer, war on cancer), in particular, has led physicians and patients alike to feel pessimism about prognosis. The focus in the literature has generally been on war metaphors, and has drawn only from American English data. There are also studies showing distinctions in metaphor use between patients and doctors (Semino et al. 2015), with patients favoring war metaphors.

In this talk, I discuss how computational and corpus linguistic methods are used to discover metaphors beyond the much-explored war metaphors. I also analyze data from other languages, bettering our understanding of both metaphor theory and cancer framing. Using large corpora of web-based texts (Jakubíček et al. 2013), and the metaphor-mining tool MetaNet (Dodge, Hong & Stickles 2014), I present a more diverse landscape of metaphors used to talk about cancer. I mine texts for a broader variety of metaphors, and show commonalities among linguistic metaphors at higher levels of conceptualization (e.g. battle a disease may occur often cross-linguistically but knock out cancer may not). Cross-linguistic corpus work (with data from Spanish, Romanian, French and Japanese) reveals that war and journey metaphors are not necessarily evenly available across languages, or are present in different proportions than they are in English. I also explore how fundamental differences in the grammatical structures of different languages may explain some of these different distributions. For example, transitive constructions such as battle cancer are frequent in English, but not in Romanian, while the latter makes more use of nominal constructions, e.g. lupta împotriva cancerului (the fight against cancer). Grammar may put limitations on the instantiation of particular metaphoric expressions, leading to speakers of different languages having varying degrees of access to particular conceptual metaphors. It is hoped that more detailed linguistic analyses on the basis of large data sets can help enhance the understanding of cancer for the health communication and medical fields.

Segmentation of complex motion with causal chains in Mandarin Chinese: A semantic typological perspective

Yu Deng

This study attests the causal relation in motion event segmentation by considering both linguistic and non-linguistic evidence. The purpose is to revise and develop Bohnemeyer et al.’s (2007, 2010) MEP and event segmentation typology. There are two main research questions: (1) what are the distribution properties of segmentation patterns of the subevents in complex motion with casual chains in Mandarin Chinese? (2) what are the lexical and constructional properties of Chinese causal chain narratives in contrast to the 4 languages (i.e. Ewe, Lao, Japanese, Yukatek) investigated by Bohnemeyer et al. (2010)? 20 native Chinese speakers participated in the experiment. They first viewed 20 ECOM videos and answered the question of ‘What happened’. In what follows, they were required to judge “how acceptable to say the first causes the last event to occur?” and chose their rating scores for each video.

The results of the elicitation data and non-linguistic measurement show that linguistic representations of causal chains in Chinese vary with respect to different segmentation patterns. The chain of “CR>AF” shows the highest rate, suggesting that Chinese speakers pay more attention to the beginning and end of the conceptual causal events and spatiotemporally contiguous impingement under causation dynamics is the most adopted pattern in Chinese casual chain narratives. Surprisingly, a large number of the motion constructions in the linguistic data encode no causal relations at all, and such phenomenon occurs with the presence of spatial or temporal gaps (i.e. no contact). The non-linguistic measurement of direct causation in causal chain segmentation verifies that causal relations is highly sensitive to the parameter of spatial or temporal contact, whereas the parameters of mediation and force dynamics do not show significant impact on causality representation in causal chain segmentation. At the morpho-syntactic level, different causative constructions are used to represent the causal chain in complex motion. Ba construction ranks the highest, and this is followed by multi-macro-event construction, Zhe construction and serial verb construction, periphrastic causative construction, resultative verb construction, Jiang Construction and Bei Construction. Most causative constructions in Chinese have the MEP except some multi-core constructions in which different cores are not in a cosubordinate linkage. Typologically speaking, Chinese is more similar to Ewe and Lao, while it differs from Japanese and Yucatec in causal event segmentation. Overall, the typology of causative motion constructions in Chinese shows a complementary typological framework.

***How deep must a dead metaphor be buried?
The language, experience, and sedimentation of non-actual separation***

Simon Devylder, Jordan Zlatev and Johan Blomberg

Separation can be defined as a change-of-state event affecting the material integrity of a figure and causing a disruption in its continuity. In contrast, *non-actual separation* — henceforth *NAS* — refers to change-of-state events, which affect the integrity of a figure that is not material (Devylder 2016). The experience of non-actual separation is related to the experience of *non-actual motion* (NAM) (Blomberg & Zlatev 2014; Blomberg 2015) that is, dynamic qualities of consciousness pertaining to situations lacking actual motion. We explore the experience of NAS of the intangible Self, and the way it is expressed in authentic English and French examples, as in (1-2).

- (1) *I am falling apart.*
- (2) *Cette relation m’a mis en pièce.* (‘This relationship has torn me to pieces’)

We propose that such expressions are *motivated* by original embodied experiences of separation, but conventionalized in language, which allows efficient social transmission. However, the benefits of socially shared meaning may eventually come at the price of “burying” the pre-linguistic motivations. This can be illustrated in (3-4), where etymologically, the verbs *corrupt* and *distract* refer to a separation in the integrity of the entity they affect. In other words, some time in the 14th century using the overtly coded separation verbs *rumpere* ‘to break’ and *distrahere* ‘pull in different directions’ became the correct way to respectively refer to a disruption of moral integrity (3) and intellectual integrity (4).

- (3) *Politics has corrupted him.*
- (4) *Je fût distrait par ce bruit.* (‘I was distracted by the noise’)

Following Blomberg & Zlatev (2014) we can say that the original embodied NAS experiences have become *sedimented*; expressions like (3-4) are not dead metaphors as “the original experience can ... once again be given a breath of life” (Blomberg & Zlatev 2014). The examples in (5-6) can be reanimated even more easily, showing that they are less sedimented than (3-4).

- (5) *I pulled myself back together.*
- (6) *Son visage, décomposé par la terreur.* (‘her face was crumpled by fear’)

This supports the need to distinguish prelinguistic *motivation* and linguistic *convention* and to study their interaction.

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Recruiting gesture to express epistemic modality in a sign language

Elisabeth Engberg-Pedersen

In spoken languages the distinction between manual gestures and verbal speech is obvious because the modalities differ. In sign languages the difference between gestural and linguistic is much less clear. In recent years, gesture studies and sign linguistics have converged on investigating conventionalization of meaning in communication (Wilcox 2013), and sign linguists have shown that gestures can be recruited as grammatical markers or lexemes in a sign language (Janzen & Shaffer 2002; Wilcox 2004). Criteria for distinguishing between linguistic and gestural include semantic abstraction, formal reduction (Wilcox 2004), internal analysability (McNeill 1992) and sequential combinability (Emmorey 1999; but see Müller, Brassem & Ladewig 2013). A gesture family with one or two loose flat hands, palms up, the Open Hand Supine (OHS) gesture family, has been recognized as a communicatively relevant gesture for centuries (Müller 2004). It has many form variants and functions with speech (Bavelas et al. 1995; Kendon 2004) and in signing (Engberg-Pedersen 2002). In this paper I shall discuss the gesture-language borderline by investigating arguments for and against seeing OHS as integrated as a lexical or grammatical marker of epistemic modality in a sign language. In five dialogues in Danish Sign Language (DTS) native signers used many different means to express epistemic modality, including OHS. What is most interesting from the perspective of whether OHS has become lexicalized or even grammaticalised in DTS is cases where it is integrated simultaneously or sequentially with other markers or lexemes. First, OHS combined with non-manual expressions of doubt, which may also be categorized as gestural, but the simultaneously produced units are internally analysable. Second, OHS occurred, similarly to a verb like THINK, with the first person pronoun about the cognizer and/or with a pronoun about the contents of the epistemic consideration, but in contrast to THINK, it occurred in sentence-final position only.

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Axiological ambiguity of the CONTAINER schema in multimodal discourses of collective memory

Malgorzata Fabiszak

The present paper addresses two of the conference themes: language-and-culture; and discourse-and-cognition. It looks into the interplay between language and landscape architecture in the construal of collective memory in Poznań. It is inspired by research, which integrates the analysis of different modalities/ modes of communication and in this way extends the application of metaphor, metonymy and image schemata beyond language use (Caballero 2014,2016; Dancygier 2015,2016; Forceville – Urios-Aparisi 2009; Pinar-Sanz 2015; Romano – Porto 2016). It connects to Lakoff and Johnson's (1980,1999) position in so far as it shows how the same underlying conceptual structures can influence the perceptual and meaning making processes within and outside language use. In this way it contributes to our understanding of the Generalisation and Cognitive Principles. Another theoretical source for the present study is the work on the axiology of image schemata, in which Krzeszowski (1997: 280) shows that “valuation is an integral part of conceptualization”. For example, the CONTAINER schema maybe viewed from two opposing perspectives either as carrying positive or negative polarity. It is positive within the frame, for which shelter is its prototypical instantiation, or negative when framed as a prison. The third and last source for this study is a research into the discourse on collective memory (e.g. Golka 2009, Seymour – Camino 2017). The aim of this study is to explore how image schema of CONTAINER interacts with other schemata (LINK, PART-WHOLE, BLOCKAGE) in the construction of social inclusion/exclusion in the discourses of collective memory. The case study is based on an analysis of three types of sources: (1) the memorial landscape of a reconstructed Jewish cemetery in Poznań, (2) the press representation of the opening of the memorial, and (3) individual and focus interviews with the inhabitants of Poznań about the city's past. The results of the analysis show that similar conceptual processes underlie the verbal and the spatial construal of the self and other dichotomy. When integrated with a specific axiologically loaded framing of either prison or shelter as the prototypical CONTAINER, it can produce two opposing construals of the position of the Jewish past in the city collective memory. One, in which the Jews are viewed as peripheral, barred from the public memorial practices of the majority community; and another, in which the remembering about their presence in the city is a part of the everyday life of its contemporary inhabitants. Thus the inherent ambiguity between various CONTAINER frames may give rise to opposing representations of the past.

Parallels between vowel systems and musical scales from an evolutionary perspective

Gertraud Fenk-Oczlon

Parallels between language and music are considered as a useful basis for examining possible evolutionary pathways of these achievements. In this paper we present commonalities in the sound systems of language and music and some cognitive and evolutionary explanations emphasizing the key role of vowels in the language-music relationship.

Authors looking for parallels in the sound inventories of language and music often compared the whole phonemic inventory to musical pitches per octave and found that the number of phonemes across languages varies to a much greater extent than the number of pitches per octave (“typically between 5 and 7” (Patel, 2008)). We choose a different approach in the search for analogies in the sound systems (Fenk-Oczlon & Fenk, 2009-2010): Since vowels play a decisive role in generating the sound or sonority of syllables and show all the core components of music (timbre, intrinsic pitch, intensity, duration) we compared the inventories of vowel systems and musical scales across cultures. Striking coincidences showed in the following cornerstones: a maximum of roughly 12 elements, a minimum of 2-3 elements, and a frequency peak in 5 elements, i.e. in 5-vowel-systems and pentatonic scales. In Fenk-Oczlon & Fenk (2009) we speculated whether cultures with a higher number of vowels also tend to use a higher number of pitches in melody.

The present study examines this hypothesis in more detail, using Nettl's (1956) descriptions of indigenous Amerindian music. Nettl delineated musical features of Native American tribal music such as rhythm, melodic contour, variety of form etc., and, most important for our objective, the number of tones per scale. He used six musical areas in describing their music: Eskimo-Northwest coast, Great Basin, California-Yuman, Plains-Pueblo, Athabaskan, and Eastern area. Furthermore, Nettl provided examples of specific Native American Indian tribes in a given musical area. We now tried to find, as far as possible, information about the number of basic vowels in the languages named, and then assigned the number of vowels to the scale type data reported by Nettl. The World Atlas of Language Structures Online and especially the compendium of online materials presented on the website Native Languages of the Americas: Preserving and promoting American Indian languages turned out to be a

very useful source for relevant data. The results: Languages with up to 4 vowels (e.g. Navaho, Cheyenne) tend to have tritonic or tetratonic scales, languages with 5 vowels (e.g. Creek, Yuchi) pentatonic scales, and languages with more than 5 vowels (e.g. Hopi) hexatonic scales.

The co-variation between vowel inventory and number of musical intervals will be discussed with respect to singing and to half-musical communication (Jespersen, 1894) in ontogeny and phylogeny.

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The earlier, the better? On the role of individual differences in younger vs. older primary school Danish learners of English

Katalin Fenyvesi, Mikkel Hansen and Teresa Cadierno

Research on the benefits of early language instruction in foreign language (FL) contexts has failed to provide evidence for „the earlier, the better” slogan (e.g., García Mayo, 2003; Muñoz, 2006, 2008; Nikolov, 2009). Besides starting age, a number of individual factors that may influence FL achievement. Although the role of these factors has gained increasing attention in the SLA field, research on young language learners is still rare and tend to focus on a few individual characteristics at a time. The present study attempts to fill this gap by investigating two groups of primary school Danish children who started learning English in first and third grade, respectively. We examined whether there were age-related differences (early vs. late starters) in relation to a wide range of individual factors (learner’s competence beliefs, FL-classroom anxiety, motivation and attitudes, and students’ mindset) and whether there was a relation between learners’ individual factors and L2 English proficiency.

Our sample consisted of 276 children from six primary schools in Denmark. Research instruments included a questionnaire about individual factors and two standardized proficiency tests that measured receptive vocabulary (PPVT-4) and grammar (TROG-2). Proficiency measures were administered twice, before and after one year of English instruction.

Regarding the psychological characteristics of the two age-groups, results showed that on composite indices of five-point Likert scales, first-graders reported higher competence beliefs than third-graders. This resonates with general findings in developmental psychology that younger children are more optimistic about their own abilities than older children. Relatedly, first-graders reported significantly less anxiety than third-graders. However, third-graders had more of a growth mindset than first-graders.

Concerning the relation between children’s individual factors and L2 proficiency gains, competence beliefs were related to higher language scores before and after instruction for both ages. Having a growth mindset was related to higher language scores before English instruction for first-graders and third-graders. A growth mindset did not correlate with proficiency gains but it was still related to language scores one year later. Anxiety did not correlate with PPVT-4 and TROG-2 scores for first-graders whereas it negatively correlated for third-graders and even correlated negatively with third-graders’ gains after one year of instruction. For all correlations and difference-scores reported above: $p < .05$.

Data were analyzed with a generalized linear mixed model to understand the relationships between children’s individual factors in early FL-learning and L2 achievement. To our knowledge, no previous studies have conducted a systematic examination of such a wide range of learner factors in relation to L2 achievement in this age group. We found significant negative correlations between FL-classroom anxiety and achievement and documented the positive impact of having a growth mindset on L2-achievement. Results will be discussed within the „the earlier, the better” debate.

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Productivity in the constructional network: The Dutch intensifying fake reflexive resultative construction

Emmeline Gyselinck and Timothy Coleman

The Dutch intensifying fake reflexive resultative construction, demonstrated below, is a formally transitive pattern in which a result is predicated of a reflexive object that is not selected by the verb.

(1) Ze zijn zich een hoedje/rot/kapot/wild geschrokken door het geluid.

‘They were very startled (lit. startled themselves a little hat/rotten/broken/wild) by the noise.’

Instead of denoting a state resulting from the activity denoted by the verb, the bolded elements are used as intensifiers, boosting the verbal event of *schrikken* ‘to startle’ to a higher degree. This construction displays an intriguing mix of lexical idiosyncrasy and productivity in present-day Dutch. While some intensifiers seem to combine freely with a wide range of verbs, others show very limited combinatorial possibilities: the intensifier *een hoedje* ‘a little hat’, for instance, is almost exclusively found with *schrikken* ‘to startle’, whereas *kapot* ‘broken’ can intensify virtually any verb.

From a constructional point of view, we can describe the intensifying fake reflexive resultative in terms of a constructional network that is made up of subschemas at different levels of schematicity, displaying varying degrees of productivity (see, e.g., Goldberg 1995, Hilpert 2013). The highest level consists of the abstract schema [Subj V REFL XP], associated with the semantics ‘to V excessively’. At a lower level, we find different subschemas in which the intensifier is lexically filled, e.g. [Subj V REFL *kapot*] or [Subj V REFL *een hoedje*]. However, given that *een hoedje* ‘a little hat’ only occurs with *schrikken* ‘to startle’, one might argue for a subschema that is even more specified, i.e. [Subj *schrikken* REFL *een hoedje*]. In order to elucidate the interplay between conventionalization and productivity, we will zoom in on a number of frequent intensifiers from different syntactic categories (i.e. AP: *dood* ‘dead’ vs. *blauw* ‘blue’, NP: *een hoedje* ‘a little hat’ vs. *een ongeluk* ‘an accident’ and NP+PP: *de ziel uit het lijf* ‘the lungs out of the body’ vs. *het vuur uit de sloffen* ‘the fire out of the slippers’) and the verbs they combine with, using the Sonar Dutch Reference corpus.

To measure the productivity of the different subschemas, this paper will combine two approaches that each take a different perspective on the notion productivity. On the one hand, it is possible to determine the degree of productivity of a subschema with the measures developed by Baayen (1992, 1993, *inter alia*), which are based on type frequency, token frequency and hapax count. Barðdal (2008), on the other hand, uses a combination of type frequency and semantic coherence to determine the degree of productivity of different (sub)schemas. By comparing the results of two complementary approaches, we aim to gain some insight into the hierarchic organization of the constructional network of the intensifying fake reflexive resultative construction.

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The Cross-Linguistic and Conceptual Role of the Adverb Category

Pernilla Hallonsten Halling

As a lexical category, adverb has received very little attention within typology, for two major reasons. Firstly, it is commonly assumed that adverbs, in those languages where they can be found, are generally derived from adjectives, and adjectives have been thoroughly investigated (Dixon 1977, Wetzler 1996, Stassen 1997, Dixon & Aikhenvald 2004, Riessler 2016). Secondly, an even more dominant view is that adverb is a catch-all category with such heterogeneous content that it is neither worth treating it like other categories, nor comparing it across different languages. In this talk, predicate-modifying adverbs are examined and compared to adjectives cross-linguistically, showing that interesting patterns can be found, which reveal both the presence of adverbs and their independence as a category in many unrelated languages. Unexpected relations between adverbs and adjectives in other languages are also highlighted.

Attributive adjectives, predicative adjectives, and adverbs are compared in a sample of 60 languages from 49 different language families from the whole world. The data comes primarily from reference grammars and the sample is based on a combination of selecting languages with relevant adverbial structures and using as genetically diverse languages as possible. In the comparison, the constructional-typological approach (Koch 2012) is used, in which whole constructions and not only individual lexemes are analyzed.

The results show that in several unrelated languages, adverb as a category is completely separate from adjective. Adverbs even occur in some languages that do not have a clear class of adjectives. Contrary to prevailing expectations, adverbs thus appear to be conceptually no less basic than adjectives. Even though the attributive and predicative functions are considered to belong to the domain of adjectives, certain languages show very similar or even identical encoding for predicative adjectives and adverbs, while attributive adjectives are encoded in a different way. Other languages show the same encoding for attributive adjectives and adverbs, pointing to a common functional domain for the two, and leaving predicative adjectives on the side. In conclusion, the core of the adverb category is much more basic than what has been previously assumed, implying a cognitively central role for this category.

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Antonym knowledge in children with language impairment - testing the semantic domain theory

Kristina Hansson Hansson, Ketty Holmström, Siri De Geer and Peter Gärdenfors

Background: In this study we explore if the single domain thesis for adjectives is relevant for children with language impairment (LI). The thesis predicts that if one word from a domain is learned during a certain period, other words from the same domain are more likely to be learned during roughly the same period. Given that the two words in antonym pairs belong to the same semantic domain the assumption is that children are more likely to master both or none of the words than to master only one. The thesis also predicts that children learn to speak about different semantic domains in roughly the same order. In an earlier study on antonym production in children with typical language development (TLD) support was found for these hypotheses. LI often includes lexical/semantic problems, children with LI tend to have smaller and less well organized vocabularies than controls, although this aspect of language is less explored than form aspects.

Aim: To test if the likelihood for knowing both or none versus only one word in an antonym pair is similar to that found for children with TLD, and whether the order of acquisition of the domains tested is the same for children with LI as found for children with TLD. We also investigate whether antonym production is associated with other aspects of language ability.

Method: Children with LI (n = 27) aged 3;9-7;4 were compared to 3-year-olds (n = 17) and 5-year-olds (n = 19) with TLD. The assessment included the antonym game where the children were given an adjective and were asked to provide its antonym. Phonological short-term memory, language comprehension and grammatical production were also assessed.

Results: Preliminary analyses indicate that the likelihood for knowing both or none in a pair is similar for children with and without LI. Furthermore, children with LI learn the adjectives in roughly the same order as controls. Performance on the antonym test was associated with the severity of LI. Antonym test performance correlated strongly with language comprehension and grammatical production and moderately with phonological short-term memory.

Conclusion: The results confirm the single domain thesis for children with LI. Antonym comprehension and production could offer a theoretical basis for the development of assessment instruments and form a basis in intervention planning for lexical difficulties.

One brain, one language, two codes? The curious case of Norwegian

Viktoria Havas and Mila Vulchanova

Bilingualism and multilingualism is becoming the norm and not the exception in today's pluralistic societies. The Norwegian language situation is characterized by multiple diglossia, both at the level of the written language (through Bokmål and Nynorsk), and at the level of the spoken language (by multiple dialects). Still, many aspects of this situation remain largely understudied. Since Bokmål and Nynorsk, both of which are present in the media, at schools and elsewhere in the public sphere, are highly similar variants of Norwegian we sought to study whether the two varieties are really processed by the brain as two linguistic codes, as in the case of other bilingual language processing, or as one code.

We tested a wide range of adult Bokmål-Nynorsk users with a cross-language primed lexical decision task where participants encountered Bokmål-Nynorsk word pairs (translation priming in both directions). Participants ranged from mainly Bokmål users to mainly Nynorsk users. Since Bokmål is the predominant written language across Norway we expected Nynorsk users to behave as balanced bilinguals and Bokmål users to behave as unbalanced bilinguals.

We also assessed the effects of orthographic similarity in our experiment; the prime-target word-pair could fall into one of the following categories: related form with stem change (eg. melk-mjølk), related form with morphological (suffix) change (eg. kvikkhet-kvikkleik) or unrelated form with the same meaning (eg. spice-ete).

We found bidirectional priming effect for the Nynorsk user group (as one would expect in balanced bilinguals); however we found a different, more complex pattern for the Bokmål users with inhibitory and facilitatory priming effects depending on the orthographic conditions and priming direction. We have also tested Bokmål-English priming effects to compare it to Bokmål-Nynorsk priming and assessed the influence of second language knowledge on word reading in Bokmål, Nynorsk and English.

When linguistics and political science come together: Measuring the impact of deliberately used metaphors on citizens' perception of and opinions on political issues

Pauline Heyvaert, Audrey Vandeleene, Thomas Legein, Frédérique Depas, Jérémy Dodeigne, Julien Perrez and Min Reuchamps

As an interdisciplinary research team, we seek to tackle one important question: what is the impact of metaphors on recipients? In this context, we propose to present two experiments we conducted that both aim at measuring the impact of metaphors on citizens' perception of and opinion on two political issues, that is Belgian federalism, and the basic income.

Our first experiment was based on a newspaper article from *Le Soir* (July 2013) in which Belgian federalism was compared to a Tetris game. 500 participants were distributed across four experimental conditions according to the type of input they were exposed to, i.e. no input, text and image, text only and image only. They were asked to perform three interrelated tasks: a free description task, a picture association task, and a questionnaire measuring their attitude towards Belgian federalism. The results suggest that the participants who had been exposed to the experimental text tended to frame their perception of Belgian federalism differently from the other participants. However, these results suggest that reading a text might have an influence on citizens' representations, but they do not allow us to determine the specific role played by the Tetris metaphor. We therefore developed a follow-up experiment for which we produced two different versions of the experimental text: one version where the Tetris metaphor remained explicit and a second version where this metaphor was left out. This experiment was conducted among 600 participants distributed across 3 conditions: no input, metaphorical text and non-metaphorical text. This second design should allow us to further assess to what extent the Tetris-metaphor does in fact have an impact on citizens' representations of Belgian federalism.

Our second experiment aims at measuring to what extent metaphors might have an impact on citizens' opinion on the idea of basic income. This experiment was conducted among 750 participants who were distributed across seven experimental conditions. For the first condition, there was no input at all. The second condition consisted of a simple text explaining in a few words what the basic income is. The third, fourth and fifth condition presented the same text, but with three different metaphors added to the text, comparing the basic income to respectively allowance money, a springboard and a base frame. The two final conditions presented a non-metaphorical version of the third, fourth and fifth condition. The results of both experiments will be the main topic of our contribution.

Extended primary metaphors: A case of cognitive economy?

Annika Hillbom

According to Grady (1997), certain conceptual metaphors are more basic than others. He labels these primary metaphors. One important basis for primary metaphors is perceptual experiences gained through the five senses, like in KNOWING/UNDERSTANDING IS SEEING and AFFECTION IS WARMTH (Grady 1997). According to Stålhammar (1997) and Sweetser (1990), among others, the five senses are linked metaphorically to different domains, roughly in the following way: sight – the intellect, hearing – communication, touch – emotions, taste and smell – judgements. Sense words are also used synaesthetically, normally following a certain hierarchy from touch to sight (touch – taste – smell – hearing – sight) where a so called lower sense is used to describe a higher sense, like in a sweet silence, even though the other direction is also possible, like in a silent sweetness (Shen 2008).

In Hillbom (2015), an analysis of 119 Swedish adjectives which are used to describe touch experiences of various kinds, the results show that these touch adjectives are widely used metaphorically. They describe emotional experiences, but also social and intellectual phenomena. The results indicate that the metaphorical use of the five senses is not as clear-cut as has been described previously. Furthermore, the same adjective may describe perceptual experiences of more than one sense, like round, which represents a quality that one can see as well as feel. This circumstance seems to confirm the view of Howes (2005), who stresses the interaction of the senses in our perception of the world. However, a psycho-linguistic test (a pilot study) with informants who were asked to think of various phenomena associated to emotions, the society, the intellect, colours and music, while touching either a smooth or a rough surface, seems to indicate that there is a cognitive connection between touch and emotions, and between touch and colours/music, but not between touch and social or intellectual phenomena.

The talk will focus on how the sense of touch is used metaphorically in various domains in Swedish, while discussing the cognitive status of these uses.

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Language and thought under conditions of subcortical neurodegeneration: new insights from Huntington's disease

Wolfram Hinzen, Cati Morey, Joana Rossello, Raymond Salvador, Clara García-Gorro, Estela Camara and Ruth De Diego Balaguer

Huntington's disease (HD) is an autosomal dominant genetic neurodegenerative disease involving primary neural death in the striatum extending progressively to widespread cortical areas. While cognitive impairment additional to primary motor symptoms in HD is widely recognized, investigations of language function are in their infancy, even though striatal damage in this disease provides an important model for studying cortical-subcortical loops involved in normal language function and their relation to motor processes. Essentially no insights exist on patterns of spontaneous and narrative speech in particular. We set out to profile deviant patterns in such speech in 28 HD gene-carriers and 28 controls matched in age, gender and educational background. 9 of the patients were in the prodromal stage of the disease (pre-HD, i.e. no motor symptoms). Participants retold the story of Cinderella. Their speech was transcribed and annotated according to 57 linguistic variables grouped into 5 broad domains defined by linguistic criteria, 1 Quantitative (e.g. Mean Length of Utterances), and 4 error domains, relating to aspects of Fluency (e.g. word repetitions), Clausal connectivity (e.g., use of clausal embedding), Reference (e.g., abnormal topic structure, or missing determiner) and Concordance (e.g. Agreement). ANOVAs for the five composite scores were all clearly significant, indicating that, at least, one of the groups differed from the others. Crucially, while in Quantitative, no hint of linguistic change was seen in pre-HD, in both Connectivity and Reference even pre-HD differed significantly from controls. Speech errors correlated with general neuropsychological cognitive UHDRS (Unified HD Rating Score) scores but no specific measures. Prodromal language deficits were seen in the absence of cognitive deficits as measured by standard neuropsychological tests. Among the HD patients, there was a significant positive correlation between the Quantitative Factor and the gray matter volume bilaterally in the dorsal basal ganglia (putamen/pallidum); no significant correlations were found for any of the other 4 linguistic domains, which we attribute to the fact that they reflect global cognitive functions of language, arising from the confluence of multiple cognitive and linguistic factors. However, while we measured global linguistic functions, highly specific linguistic variables were used. Overall, results suggest that language impairment in HD affects core structural and functional aspects of language that are specific to this domain and precede motor symptomatology. Moreover, they are clearly significant cognitively and functionally and are a promising marker of disease progression and cognitive decline.

Navajo students' culture/worldview and its possible relations to their writing anxiety

Yi-Wen Huang

Many factors (e.g., beliefs about writing, linguistic knowledge level, evaluation, foreign language learning in the classroom, writing-related skills including process, language intensity, past experience with writing, leisure reading, free writing, self-confidence in literacy, not knowing instructor's expectations, and using technology as a medium) have been found to be associated with writing anxiety (Jee, 2016; Latif, 2015; Lee, & Kim, 2016, etc.) in the previous literature. This study took place at a state college in the American Southwest. The majority of the students are Navajo. In this paper, I would like to discuss the relations between my Navajo students' culture/worldview which is also associated to Navajo language and existing studies of writing anxiety.

As their professor, I observed that the majority of my Navajo students engaged actively on their social media accounts such as facebook on their phones. They are constantly exposed to information from around the world; therefore, technology and globalization need to be considered when I try to understand their writing related anxiety and difficulties. Connor (2008) proposed a new term—intercultural rhetoric—for contrastive rhetoric in order to emphasize the importance of context. Based on this concept of intercultural rhetoric and the significance of context, I believe that in order to understand my Navajo students' writing difficulties and anxiety, I should learn to understand their culture/worldview. Oral traditions are a major part of the Navajo culture, and as McCarty (2013) indicated, their writing system was not established until the late 1880s. Denetdale (2007) wrote that “[f]or Native peoples, oral tradition encompasses personal experiences, pieces of information, events, incidents, and other phenomenon” (p. 40). This is a context that instructors need to learn about and understand in order to reduce their anxiety and improve instruction.

Genres such as narration and argument are required in English composition courses' student learning outcomes. Both Witherspoon (1977) and House (2002) stated that harmony and balance are the most important aspects of the Navajo's worldview.

When considering intercultural rhetoric and its relation to students' difficulties with writing related to anxiety, students' exposure to languages cannot be ignored. In the Navajo language, for instance, verbs are complex with many elements in them as Goossen (1967) stated that verbs in Navajo could be sentences themselves. There is the 4th person in Navajo language (Witherspoon, 1977) which does not exist in English grammar. The 4th person refers to a speaker's avoidance of indicating another person's states or actions in present (Witherspoon, 1977).

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Lexis and constructions as structure-assigning entities – theoretical and usage-based considerations
Mikko Höglund

According to traditional lexicalist approaches, the items in the lexicon possess the subcategorization/valency information that decides which elements can occur with the particular items (e.g. Haegeman 1991, Levin and Rappaport Hovav 1991). That is, it is the main predicate, usually a verb, of the sentence that has the semantic and syntactic information relevant to the structure of the rest of the clause or sentence. The pattern is that the head selects its arguments. Another view is put forth by many constructionists, who claim that (at least sometimes) it is not the head that selects the arguments. In this view it is the construction that is in place first and the lexical items are inserted in the construction (e.g. Fillmore and Kay 1995, Goldberg 1995).

In this paper, the matter is first discussed from the perspective of Cognitive Grammar (CG; Langacker 1987, 1991, 2008). Langacker considers CG to be a type of construction grammar, but in his 1999 book the treatment of lexical items and their behavior regarding their occurrence in different structures strongly echoes lexicalist views. In Langacker's (1999: 332ff.) view, different senses are postulated for predicates when they appear in different constructions. However, later Langacker has quite extensively (Langacker 2005ab, 2009a: Ch.1, 2009bc) discussed the relationship of lexical senses and constructional senses, and states that as much as possible of the expression's meaning should be attributed to the constructions, and as little as possible to the lexical items. Nevertheless, it is difficult to define where the line could be drawn and based on what criteria.

In addition to discussing the two views, lexicalist and constructionist, in Langacker's work (and others), the present paper will provide examples from corpora in order to illustrate different types of situations in which one or the other approach might offer a more probable explanation.

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Points of controversy in typological linguistics: iconicity, causality, frequency, zero, empathy

Esa Itkonen

Iconicity is assumed to be a relation between linguistic structure (= L) and the structure of – what? Either meaning (= M) or experience (= E) or (external) reality (= R). L and M are accessible to linguistic intuition; R is accessible to observation (= sense-perception); E in oneself is accessible to introspection while E in others is accessible to empathy. Unlike the structures of L, M, and R, “the structure of experience is not well-established” (Croft 2003: 203). M is intersubjective and conventional whereas E is subjective and non-conventional. Concept(ualization), as employed in Cognitive Grammar, is a confused notion vacillating between M and E (Itkonen 2016). L-R qualifies as (genuine) iconicity. L-M qualifies as isomorphism, i.e. (syntagmatic) ‘one form – one meaning’. L-E is unclear and/or circular. The incoherent pseudo-relation L-M~E~R qualifies as ‘iconicity’. Claims by Givón, Haiman, Croft, and Haspelmath are about ‘iconicity’, not iconicity. The existence of iconicity is beyond doubt in the clear cases: (i) quality, (ii) quantity, (iii) contiguity, (iv) temporal order (to be exemplified). The phenomenon which “disappears so rapidly under conventionalization” (Haiman 2008: 54) is not iconicity, but isomorphism. Unlike iconicity, isomorphism (= L-M) is not explanatory: the relation of M to L is too intimate for M to cause L. Nor is L-E explanatory: E is dependent on L to such an extent that any attempt to explain L by E is circular (Itkonen 2004). One may wish to replace some aspects of ‘iconicity’ by frequency: “the more frequent a sign is, the shorter it is” (Haspelmath 2008). The logical conclusion: the most frequent (grammatical) meanings are expressed by zero, which, contra Croft, Haiman, and Haspelmath, refutes isomorphism (= ‘monoexponentialism’ = ‘one form – one meaning’), unless it is applied very selectively (Itkonen & Pajunen 2011/2008, Itkonen 2013). The use of frequency explanations does not exclude the simultaneous use of non-frequency explanations: this is sanctioned by the notion of multiple causation. More precisely, frequency in itself is non-explanatory: “Counting frequencies of occurrence is never enough ... Correlations and probabilities are no substitute for causality, which is the genuinely explanatory notion” (Itkonen 1983: 276-277; similarly Weber 1973/1922: 70). What does this mean? Here as elsewhere, human behaviour is caused by the relevant goal-cum-belief constellations, to be hypothesized about by means of empathy: “The only procedures ... are rules for the human investigator, and depend essentially on his ability to empathize” (Hockett 1955: 147). The end result, when explicitly formulated, turns out to be identical with rational explanation (Dray 1974/1963, Itkonen 2013-2014).

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Russian Verbs Across Aspect and Genre

Laura Janda, Hanne M Eckhoff and Olga Lyashevskaya

Aspect is perhaps the most characteristic feature of Slavic languages. Unlike most other languages with a perfective vs. imperfective aspectual distinction, Russian aspect is not limited only to part of the verbal paradigm (as in French and Spanish, where it is relevant only in the past tense); all Russian verb forms express aspect. But how do language users know which verbs are which? Is the aspectual behavior of verbs uniform or does the broader context or genre play any role? And how do learners of Russian sort out their verbs? These questions are essential to an understanding of the cognitive reality of the linguistic category of aspect in Russian.

Unfortunately the morphological markers for Russian aspect are not fully reliable, largely because they have been cobbled together over many centuries from various sources: prepositions becoming perfectivizing prefixes, the imperfect desinence and imperfectivizing suffixes evolving in close interaction (Wiemer and Seržants forthcoming, Kamphuis 2016: Chapter 10), and the *-nŋ* suffix developing into a semelfactive marker (Neset 2013), just to name a few. Inevitably this long complex process has left a considerable residue of exceptions. The inadequacy of morphological markers as cues to the aspectual identity of verbs has been flagged as a problem from the perspective of L1 acquisition (Stoll 2001). It is clear that learners must supplement morphology with other information in order to sort out the aspect of Russian verbs.

We ask whether the aspect of individual verbs can be predicted based on the statistical distribution of their inflectional forms. Corpora of child-directed speech are far too small to serve as input for this research. Instead, we use sufficiently large samples from a variety of written genres as a proxy. Since our hypothesis is borne out on those data, we suggest that child-directed speech, as another “genre” of Russian, likely also provides statistical clues to L1 learners. We present an analysis of the “grammatical profiles” (relative frequency distributions of inflectional forms, cf. Janda & Lyashevskaya 2011) of three samples of verbs extracted from the Russian National Corpus, representing Journalistic prose, Fiction, and Scientific-Technical prose. Our correspondence analysis takes as input each verb represented as a row of figures citing the number of tokens of various forms attested for that verb, yielding a Factor 1 that correctly predicts the aspect of a given verb with an average accuracy of 93%, and models the statistical tendencies a learner would be exposed to. However, there are differences in the inventory of verbs that characterize genres and in the behavior of individual verbs across genres. We maintain that it would be possible for first language learners to use distributional tendencies in acquiring the verbal category of aspect in Russian, and that this comports well with a usage-based model of language.

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The building blocks of sound symbolism

Niklas Johansson

This study investigates sound-meaning (or sound symbolic) associations by searching for occurrences of similar sounds in wide range of concepts cross-linguistically. During the last twenty years' resurgence of interest in sound symbolism, plenty of studies have attempted to describe various sound-meaning associations and their cause, although, the majority of them have based their findings on only a few languages and concepts. There is, however, a couple of studies much larger in scale, including hundreds or thousands of languages and a greater number of concepts (Wichmann et al. 2010; Johansson in press), also including the recent, frequently cited study by Blasi et al. (2016). Despite the dignity of including 40 concepts from 6,452 languages, the Blasi et al. study uses a rather coarse transcription system which does not capture proven essential phonetic distinctions for sound symbolism e.g. voiced/voiceless (Ohala 1994).

Without venturing too far into any preconceived assumptions about what sound symbolism encompasses, except for the pure notion that many cognitively fundamental concepts possess an association between the form and meaning side, the present study attempts to describe sound-meaning association from a bottom-up approach. This is achieved by a fine-grained approach which divided phonemes according to the International Phonetic Alphabet and then systematically grouped them by various phonetic parameters in order to pinpoint the features responsible for each sound symbolic association. It features 344 concept from 245 languages, each representing one language family, resulting in around 70,000 lexemes, and includes various concepts with universal tendencies, as well as different types of pronouns, description words, terms for body parts, bodily functions, and a range of semantic domains not previously investigated from a sound symbolic perspective, e.g. kinship terms.

The featured concepts with direct sound referents, e.g. TO BLOW and TO YAWN, were, unsurprisingly, shown to be strikingly similar cross-linguistically and are, thereby, also deviant in terms of sound makeup when compared to the other investigated concepts. However, many concepts without such referents, e.g. MOTHER, FATHER, ROUND, FLAT, NOSE, NAVEL etc., were found to be equally deviant as the mentioned onomatopoeic concepts. Furthermore, several clusterings of concepts with similar semantic features were also found, e.g. concepts indicating proximity to the speaker; THIS, HERE and 1SG, and taboo words; VULVA, PENIS, BUTTOCKS, NIPPLE, BREAST (cf. Klamer 2002).

This does not only illustrate that sound symbolism operates in certain concepts regardless of language, but also that there is a preference of using certain sounds in cognitively related concepts. These findings could aid in establishing possible semantic networks and/or hierarchies crucial for understanding how concepts are arranged in the mental lexicon, and perhaps even tell us something about the evolution of these types of concepts in language.

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Pauses during text writing as a window to linguistic and cognitive development

Victoria Johansson, Pia Gustafsson and Johan Frid

In the field of cognitive writing research, one underlying assumption of studying pausing during writing is that increased pause time reflects more cognitive effort (cf. Spelman Miller 2006b). This study focuses on pauses during text writing, where previous studies have found a higher preference for pausing between larger syntactic units, such as between paragraphs, sentences and clauses (Matsuhashi 1981; Chanquoy et al. 1996).

This paper aims to examine pausing during writing in a developmental perspective, in order to establish how pause patterns during writing can reflect on linguistic structures that a writer is currently in the process of acquiring. One assumption is that pauses would be particularly frequent in linguistic contexts that the writer is struggling with at the moment. This can further be connected to theories about working memory and automatization (McCutchen 2000).

We analysed 136 computer-written expository texts by 136 Swedish participants from five age-groups: 10-year-olds, 13-year-olds, 15-year-olds, 17-year-olds and adult university students. The writing process was recorded by means of keylogging, which makes it possible to afterwards study the on-line processes during writing. Around 15 000 pauses above 2 s. were analysed regarding pause location following Spelman Miller's (2006a) suggestion to code for the preceding context.

The results revealed significant age effects for the proportion of the pause time in clause boundaries. The 13- and 15-year-olds paused most in these contexts, while 10-year-olds devoted a larger pause proportion to within-word pauses, and the oldest groups paused in connection with revision. 17-year-olds, finally, paused significantly longer in connection with phrases.

Thus, the 10-year-olds seem to a certain extent to struggle with spelling, indicated by more pause time within words. The 13-year-olds and 15-year-olds spend comparatively little pause time in any context, except the clause boundaries, which – together with analyses of how little they delete from their texts, how little they “move around” in the text, and a relatively short writing time – may indicate that they are what Bereiter & Scardamalia (1987) called knowledge tellers, i.e., very linear writers who are occupied with translating knowledge in the order they retrieve it. The 17-year-olds may be entering (or have reached) the state of knowledge transformers, indicated e.g. by being very occupied with foremost pausing and editing in the middle of phrases. The adults, finally, spend much pause time in connection with revision. Further analyses of their editing behaviour indicate that they often edit the text globally, showing yet another developmental step, knowledge crafters (Kellogg, 2006).

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Converted verbs, metaphorical language and ecological cognition

Marlene Johansson Falck and Carita Lundmark

Real world bridges, tunnels and towers are prerequisites for people to be able to think and talk about bridging, tunneling or towering actions. Yet little is known about the ways in which speakers' interactions with these artifacts have influenced verbal meaning.

This study is a corpus linguistic investigation of the converted verbs tunnel, tower and bridge based on data from the Corpus of Contemporary American English (COCA). We analyze the usage patterns of the verbs and the ways in which these are constrained by people's embodied experiences of real world tunnels, towers and bridges. Our main aim is to identify what aspects of people's experiences of these artifacts influence the usage patterns of the converted verbs. Noun-verb conversion has previously been explained in terms of metonymy (e.g. Dirven 1999), or in terms of combinations between metonymy and metaphor (e.g. Kuczok 2011), but the focus has been on the conversion process itself, while the usage patterns have been largely left unexplained.

Our analysis shows that tunnel, tower and bridge are indeed metonymic, but do not clearly fit into any of Dirven's classes. With tower and bridge there is a focus on these artefacts as agents – to bridge is to do what a bridge does, i.e. connect to things, and to tower is to stand tall, like a tower does. With tunnel, however, the focus is on the tunnel as a patient or path (i.e. on how it is constructed, or how something moves through it). Given that only bridges bridge and towers tower in a non-metaphorical sense of the word, but that many different agents can tunnel non-metaphorically, there is more scope for a non-metaphorical meaning in the case of tunnel. Accordingly, the bridge and tower instances are primarily metaphorical, and the tunnel instances more evenly distributed between metaphorical and non-metaphorical meaning. The metaphorical instances of converted verbs are either influenced by the functions of the artifacts (bridge and tunnel) or by a salient feature of the artifact (tower). However, different aspects of the functions may be in focus; tunnel focuses on motion, and bridge on the connection that is made (even though both allow motion from one place to another).

In sum, our results show that the function and salient features of the artifact influence the metaphorical patterns of the converted verbs. The cognitive principles guiding these patterns need to be further investigated.

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Some remarks on the change of deictic systems in spoken Lithuanian

Gintarė Judžentytė

According to some Lithuanian authors, the standard Lithuanian language is among the languages which have a ternary system of demonstratives (deictic pronouns): šis is a proximal deictic, anas – distal, however tas can be used to indicate both – a proximal ('near a speaker') and distal ('not near a speaker') object in Lithuanian (Rosinas 1988, 51; Rosinas 1996, 57–59).

In my previous researches, based on video material collected by an experimental method, I compared the so-called ternary system of Lithuanian demonstratives to other languages with a three-

way contrast between ‘proximal’, ‘medial’ and ‘distal’ (extremely far from the speaker and/or the addressee (Huang 2014: 195)). Eventually, I established that the ternary Lithuanian system of demonstrative pronouns has changed to the system of two members (Judžentytė 2016). At first, it seemed that the member to fall out of the system was the demonstrative pronoun *tas*. Due to its ability to replace *šis* and *anas* in contexts this pronoun proved to have a distance-neutral meaning. However, the analysis showed that it is certainly not the demonstrative *tas* which falls out of the system in face-to-face communication (exophoric use). The pronoun which has fallen out of the deictic system in spoken Lithuanian is the demonstrative pronoun *anas*.

The present paper is aimed to discuss why the demonstrative Lithuanian pronoun *anas* is not used so often anymore and why the demonstrative Lithuanian pronoun *tas* has replaced it. In other words, it aims to give some presumptions of the change in the deictic system in spoken Lithuanian.

The latest researches and collected data of the experiment reveal that in face-to-face communication the participants choose deictic adverbs of place instead of demonstrative pronouns to locate/identify entities in situations where the demonstrative pronouns would be expected, e.g.,

(1) Speaker 1: Ar gali apibūdinti, gatves, kurias matai?

‘Could you describe the streets you see?’

Speaker 2: O ten matau dar vieną gatvę, kurioje dar daugiau mašinų. Ir matau štai ten dar vieną gatvę, kurioje beveik nėra mašinų.

‘And over there I see one more street, which is full of cars. And I see over there one more street, which is almost empty.’

As this system consists of two members (čia ‘here’ as a proximal member and ten ‘there’ as a distal member), it can influence the system of demonstrative pronouns (by analogy). In addition, the gestural deixis must be taken into consideration here as well. The deictic gestures play a very important role in face-to-face communication (Levinson 2004). It seems that the usage of gestures to maintain demonstrative pronouns has influenced the change of deictic systems: the system *šis* + a gesture and *tas* + a gesture appear to be easier for use than the system with the third member *anas* + a gesture. The third reason is based on the fact that interlocutors in examples from spontaneously situated interaction usually extend here-space and can refer to ‘distal’ object/subject with the ‘proximal’ demonstrative (Enfield 2003).

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Evaluating the performance of a Naïve Discriminative Learner as a classifier for predicting the choice between constructional alternations

Jane Klavan and Arvi Tavast

Given that a multitude of parameters can influence the choice for one morpheme, word or construction over another, we need statistical modelling to determine the relative strength and importance of the various predictors. The most popular method for modelling the multivariate and seemingly probabilistic nature of linguistic knowledge has been logistic regression (for a recent overview, see Klavan & Divjak 2016). But if we want our linguistics to be cognitively plausible, should we not

consider using modelling techniques that are directly based on principles of human learning? Moreover, if interest is in modelling human knowledge, should we not compare our model's performance to that of native speakers of the language?

In this paper we take up these two questions regarding statistical modelling. We present a corpus-based model arrived at using the technique of naïve discriminative learning (Baayen 2011, Danks 2003, Milin et al. 2016, Rescorla & Wagner 1972). We evaluate the performance of the corpus-based model by comparing it to the behaviour of native speakers in a forced choice task. The dataset we work with comes from present-day written Estonian and pertains to the constructional alternation between a locative case and a postposition. 900 occurrences of the adessive case and the adposition peal 'on' were coded for 20 variables with 47 distinct variable categories. The NDL model fitted to the data has a classification accuracy of 89% (C value 0.96). Previous studies have shown that this result is on a par with a logistic regression model (Klavan forthcoming). However, in order to assess whether a statistical modelling technique yields a model that is cognitively more (or less) plausible we need to compare corpus-based models to native speakers (cf. also Divjak et al. 2016 and Baayen 2011).

In the forced-choice experiment, the task of the native speakers was similar to that of the corpus-based classification model. 50 participants were presented with 30 attested sentences in which the original construction was replaced with a blank. They were asked to choose which of the two constructions fits the context best. The mean number of "correct" choices for the participants was 20.4 (accuracy 68%, median 20, SD 2.4). We analyse the errors made by the corpus-based NDL model and compare those to the errors made by the subjects to establish whether the corpus-based model mirrors the performance that is similar to that of the subjects. Implications for methodology and theory will be discussed.

Language in Extended Cognition

Piotr Konderak

Where does language fit into a picture of a cognitive agent? The question - similar to the one asked by Clark (2008: 44) - may be decomposed into two interconnected questions:

1. how should we treat language: as a mental (cognitive) faculty, as an activity of a cognitive agent (in an environment) or as an external "object" or tool;
2. where should we locate language: in the mind of a speaker, in his/her environment or perhaps somewhere in between the two.

The main goal of the presentation is to discuss the extended view on language and to analyse it in comparison to a mentalistic approach as well as to an enactive approach. The main conclusion is that although the extended mind hypothesis (henceforth EMH, Clark Chalmers 1998) provides a promising framework for answering the above question(s), the answers actually provided by Clark (2008) are not satisfactory. Consequently, some modifications of his approach are suggested.

According to Clark symbolic language is "a form of mind-transforming cognitive scaffolding". Clark treats language as a material phenomenon used by an acting agent. Clark discusses the three aspects of language functioning: labelling, linguaform rehearsal, object of reflection. In the three cases, language ("material symbols") is treated as "just" a tool of cognition, not as a cognitive process. Surprisingly, quite different approach is presented in reference to gestures (Clark 2008: 123): gesturing is treated as an action - in particular as an act of cognition. I will show how to apply a similar approach to language (i.e. treat language as a cognitive act) in accordance with basic assumptions of EMH.

My second objection concerns the very notion of cognition: Clark treats - too narrowly - cognitive processes as mainly problem solving activity. Consequently, he considers a role of language in enabling complex problem solving (Clark 2008: 49). The notion of cognition should be broadened if we want to explain language in the EMH framework. The idea of an extended cognitive system seems to be particularly relevant in the context of explanations of language as a social phenomenon (Zlatev 2008). Such an extended system may consist of several language-using creatures organized in a community. In the case one may retain the notion of language as a primarily social, treating it simultaneously as a (extended) cognitive process. The crucial question to be answered in this context is: how extended should be the system to enable explanation of language.

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Is Rolls Royce the paragon of brand names? Brand name analogies and brand name genericisation
Anu Koskela

Personal names and place names can occur in analogies of the form X IS THE Y OF Z, as in 'He is the Einstein of comedy'. Such extended uses of names (eponymies) and the meaning construction processes involved in the X IS THE Y OF Z construction have been studied extensively (e.g. Lakoff 1987, Barcelona 2004, Fauconnier and Turner 2002, Wee 2006, Pang 2010). However, the use of brand names in analogies has received less attention, although they can similarly occur in such constructions: 'This is the Rolls Royce of hand dryers'.

Some accounts (e.g. Lakoff 1987, Barcelona 2004) have argued that uses of names within X IS THE Y OF Z construction involve the conceptualisation of the named Y entity as a paragon that stands metonymically for a whole class (e.g. Einstein – HIGHLY INTELLIGENT PEOPLE). However, brand name genericisation (e.g. Kleenex – 'a tissue', Hoover 'a vacuum cleaner') has also been argued to involve A MEMBER FOR THE CATEGORY metonymy (e.g. Kövecses and Radden 1998). This raises the question of whether/how the meaning construction processes involved in brand name analogies and brand name genericisation differ.

This paper argues that neither name analogies nor cases of brand name genericisation involve a simple A MEMBER FOR THE CATEGORY metonymy, although metonymic-type conceptual highlighting and backgrounding do play a role in both. Highlighting and backgrounding interact with metaphoric/analogical reasoning in name analogies, but not in brand name genericisation. This argument is supported by the analysis of analogical and generic uses of brand names drawn from the web and the NOW corpus (Davies 2010-). This data shows that the Y entity in name analogies of the form X IS THE Y OF Z is not necessarily the paragon of a category and that in different contexts, analogies involving the same brand name can highlight very different properties of the branded product.

Brand name analogies and brand name genericisation are also motivated and constrained in different ways. Genericisation is typically motivated by the lack of an existing label for a product category and a very tight association between a product category and a brand. Name analogies, on the other hand, draw on looser associations: a high quality hand drier could equally be called 'the Cadillac of hand dryers'.

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A Cognitive Insight into the Translator's Visibility
Kseniya Leontyeva

The translator's visibility in the text has been widely conceptualised of as "interventionist" (Venuti 1995/2008) and "manipulative" (Hermans 1985/2014), with all ethically- and ideologically-loaded negative connotations such categorization entails. However, from the present-day 4E cognitive perspective such enlanguaged visibility is quite a natural feature of cognitive and semiotic processes mediating translating as a specific form of embodied, experientially grounded and perspective-driven sense-making (cognitive) activity of a biosociocultural organism, interactive (relational) by nature and interpretive (evaluative) in purpose (e.g. Zlatev 2003; Kravchenko 2013; Froese & Di Paolo 2011). In the paper I will provide an operational construal of translating as a form of such interpretive relational sense-making, wherein the source text as an environmental semiotic tool/resource functions as a "material medium of access" (Zalevskaya 2014) to a physically non-existent world and an "instruction manual" (Violi 2001) for its imaginative quasi-perceptual enactment (Caracciolo 2014), directing the translator's attention and intentional consciousness to certain features thereof. The translator's mediating social function entails verbal construal of a similar configuration of the narrated world in and through target semiotic resources. However, due to the radically embodied and pre-reflective nature of the living/lived perspective (Thompson 2005; Violi 2009; Kyselo 2014) mediating such construal and the dynamism of both the translator's body and the world it interacts with (both non-existent and actual), the translator is at most partially aware (at the level of reflective experience and access consciousness) of their visibility in the text as the end product of their perspectival and experientially grounded sense-making. I will focus on the processes of "windowing of attention" (Talmy 2001) and related phenomena of salience, (de)focusing and perspectivisation (Langacker 2013; Iriskhanova 2014), first and foremost responsible for verbal foregrounding of certain features of the imaginary world construed/enacted by the translator. My argument will be illustrated by examples from Russian translations of short stories by F. Scott Fitzgerald and Alice Munro.

Acknowledgements. The research is supported by the Russian Science Foundation, project 15-18-10006 «Cognitive Study of Anthropocentric Nature of Language».

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Motivation and idiosyncrasy in construction grammar

Wojciech Lewandowski

Many generative researchers have the idea that constructionist approaches involve lists of idiosyncratic constructions. I provide evidence from the Spanish completive construction that this statement is far from the truth.

The Spanish *se* covers a broad range of functions, such as (i) reflexive, (ii) middle, (iii) passive, (iv) impersonal, etc. My goal is to demonstrate how one of the most unusual uses of *se*, that of a completive marker (*comerse un bocadillo* 'eat up a sandwich'), is related to and thus motivated by, the widely discussed cases mentioned above. While the use of *se* as a completive marker may appear to be idiosyncratic, I argue that its appearance is no accident. Rather, as is usually the case, the non-prototypical use arises as a minimal extension of other, well established uses (Goldberg 1995).

While many researchers consider *se* and its cognates as an atomic category (a pronoun or an affix; Monachesi 2005), this morpheme should be analyzed as a network of senses (Maldonado 1992), ranging from the prototypical reflexive to more grammaticalized functions. On the other hand, I show that previous approaches concerned specifically with the completive *se* consider only those data that reflect the internal needs of the specific theoretical framework (e.g., Nishida 1994; Basilico 2010). More concretely, it is usually claimed that *se* converts consumption verbs into accomplishments. However, it covers a range of different meanings, some of which are not accomplishments (e.g., "complete knowledge"). I propose to capture this fact by positing a network of senses in which the central "complete consumption" meaning gives rise to more peripheral manifestations. This approach allows me (i) to provide a complete analysis of the completive reflexive, and (ii) to treat the semi-idiomatic constructions (e.g., *jugarse el dinero* 'gamble the money away') which otherwise would have to be listed as "lexical orphans", as belonging to a structured inventory of *se*-constructions.

In short, my empirical data serve as an illustration of the fact that certain uses cannot be fully predicted from other uses of a construction, but new uses rarely appear *sui generis*. I provide further cross-linguistic evidence in order to strengthen the claim that the completive construction, while motivated, is not predictable from general pragmatic or processing factors.

Morphological transitives in Spanish and Danish – a typological perspective

Wojciech Lewandowski and Johan Pedersen

In the last decades, a huge amount of work has been devoted to Goldberg's (1995, 2006) Construction Grammar (CxG) and Talmy's (1991, 2000) typology of motion events. Goldberg posits the existence of argument structure constructions which carry meaning independently of the verbs, thus establishing a distinction between verb and constructional meaning, which is especially appealing when the grammatical constraints of the verb are violated (e.g., when an intransitive verb is used transitively).

According to Talmy's binary classification, verb-framed languages (e.g., Romance) encode the Path (framing event) in the verb, and the Manner (co-event) in an adjunct, whereas satellite-framed languages (e.g., Germanic) express the Path in a satellite (a prefix or a particle), and the co-event in the verb. While both frameworks have significantly contributed to understanding the nature of language, less attention has been paid to the connections between them. Particularly, it has been argued that Talmy's typology would benefit from being integrated into a constructionist framework (Narasimhan 2003; Pedersen 2009, 2014, 2016). In this talk, we show that CxG, correspondingly, can benefit from Talmy's (1991, 2000) typology when analyzing cross-linguistic variation of argument structure. Our evidence comes from corpus-based (CREA and KorpusDK) analyses of the BE-prefixed-construction in Danish and the completive construction headed by the clitic *se* in Spanish. Both constructions are associated with a morphological marker that (i) determines the core schema of the constructional meaning (coverage and completeness, respectively; e.g., *betræde græsset* 'tread the grass' and *patearse la ciudad* 'tramp all over the city') and (ii) licenses unselected direct objects (cf. **græde tabet* 'wail the loss' with *begræde tabet* 'bemoan the loss' and **beber el sueldo* 'drink the salary' with *beberse el sueldo* 'waste the salary'). De Cuyper (2006) argues in her syntactic-lexicalist approach to resultatives that the completive *se*-construction is a satellite-framed pattern. While we agree that the role of *se* is similar to that of Germanic satellites in the sense that it elaborates the semantic skeleton of the construction, De Cuyper (2006) does not recognize that the relation between verbal and constructional meaning (in our constructionist terms) is of a different nature. Basically, in the Danish *be*-construction, the verb represents the co-event, while the *se*-construction, despite the apparent parallelism, corresponds to a verb-framed lexicalization pattern. We conclude that CxG and Talmy's (1991, 2000) typology of macro-events can mutually benefit from each other when analyzing cross-linguistic variation of argument structure.

The Semantics of "Violence": Ethnoembodiment and Postcolonial Cognition

Carsten Levisen

This paper presents a semantic analysis of "violence" – a word around which Anglo-international discourses revolve. Many ethnolinguistic communities around the world are currently adapting this English lexical concept into their linguistic systems, and, presumably also, the view of the world embodied by the "violence" concept.

Based on semantic fieldwork in Port Vila, the creolophone capital of Vanuatu in the South Pacific, the paper investigates the discursive introduction of "violence" into a community which, until recently, lived by other concepts. I compare and contrast the traditional Bislama concepts "kilim" and "faetem" with the newly imported English word "vaeolens" (violence). My study provides new evidence for how cognitive and semantic change co-occur in the context of postcolonial linguistic communities, and my paper addresses an important, ongoing controversy related to the notion of "Anglocentric bias": In *The Better Angles of our Nature* (2011), Stephen Pinker argues that "violence" is in decline in human history, and that "cooperation", and "altruism" are on the rise. In *Imprisoned in English* (2013), Anna Wierzbicka shows that "violence", along with "cooperation" and "altruism" are all English concepts, without counterparts in many (most) languages, and that Pinker's claims are Anglocentric in nature.

My paper "vaeolens", as a new word that has attracted a number of other English-based phraseologies such as "vaeolens againsem woman" 'violence against women', and "vaeolens againsem pikinini" 'violence against children'. Semantic explications of "violence/ vaeolens", "kilim" and "faetem" will be provided and based on these explications, two different cultural models will be articulated, based on two different ways of co-conceptualizing the human body, personhood, sociality, and power – an Anglo English model (or Anglo-International), a traditional South Pacific model of "the body in society". Based on evidence from South Pacific semantics, the paper suggests two new directions for cognitive semantics, firstly, the need for new studies in "ethnoembodiment", i.e. the diversity of ways in which the body is conceptualized across ethnolinguistic communities, and the ways in which these different conceptualizations allow for local configurations of meaning, and secondly, a "postcolonial turn", in which postcolonial language varieties, such as creoles, postcreoles, and world Englishes, are brought into the study of the language-cognition interface, in order to shed new light on old debates and controversies (Levisen & Jogie 2015, Levisen 2016).

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Relaxing the "boundary-crossing constraint" in (supposedly) verb framed languages

Viswanatha Naidu, Simon Devylder and Jordan Zlatev.

It has been proposed that in supposedly verb-framed languages, such as French, in contrast to satellite-framed languages, such as English and Swedish, it is not possible to use a manner-of-motion verb such as *courir* (Fr. 'run') to describe an event with "boundary crossing" (Aske 1989; Slobin 1994; Talmy 2000; Özcaliskan 2013). If a prepositional phrase denoting a delineated space (like a room) is used in such a context, the only possible interpretation is said to be locative and not translocative (1).

(1) Il a marché dans la cuisine.
He PST walk in DEF kitchen
'He walk in/*into the kitchen.'

However, more recent research has shown that verb-framed languages are far from being a homogeneous category (Ibarretxe-Antunano 2009; Fagard et al. 2013), and that even in a given language, there is considerable variation with respect to the "boundary-crossing constraint". We argue that the following factors contribute to "relaxing" the constraint: (a) situational context, (b) degree to which the landmark phrase denotes prototypical containment and (c) Implicated vertical motion (d) implied direction of motion. For example French, often given as a typical illustration of the boundary-crossing constraint, shows the boundary-crossing reading in a specified situation. For instance, if the context of (2) is that I hear the sound of a cry in the kitchen while in the living room, then a boundary-crossing reading is most natural with both prepositions. On the other hand, in a neutral context, and with a PP that does not denote typical containment as in (3), a translocative interpretation is only possible - in some contexts - with the preposition *à* ('to'), but not with *dans* ('in').

(2) J' ai couru à/dans la cuisine.
I PST run to/in DEF kitchen
'I ran into the kitchen'

(3) Il a couru à/dans l' ombre.
I PST run to/inside DEF shadow
'He ran ?into/inside the shadow'

Further, in Telugu (Dravidian), which may be regarded as verb-framed due to the regular use of verbs like *ve[lu]* 'go', it is possible to express translocation with a manner verb that implies implied directional movement ('run'), but not with one that does not ('dance') as illustrated in (4).

(4) amma:yi iṁ[lo:-ki parigettiṁdi / *ḍa:nsiṁdi
girl house-to ran/*danced
'A girl ran/*danced into the house.'

Against this backdrop, we provide an analysis of such variation using the framework of Holistic Spatial Semantics (Zlatev 2003; Blomberg 2014), according to which a boundary-crossing reading can be

expressed either overtly (in a preposition like ‘into’) or covertly, through a combination of factor such as (a-c). Typologically, some languages such as the prototypically verb-framed Spanish and French, could be said to prefer the covert strategy and languages such as Telugu and Tamil could be said to prefer the overt strategy.

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Language Change, Cognitive Linguistics and Russian Numeral Constructions: Corpus Data vs. Experimental Data

Tore Nessel and Maria Nordrum

The quantitative turn (Janda 2013) offers new opportunities for the study of language change in cognitive linguistics – but also challenges. In this study, we argue that quantitative analysis of corpus data shed new light on a vexed question in Russian historical linguistics, viz. the development of numeral constructions. It is shown that these constructions undergo radical change in the 19th and 20th centuries. However, while CART analysis (Classification and Regression Trees, Strobl et al. 2009) of data from the Russian National Corpus (RNC www.ruscorpora.ru) accommodates the interaction of a number of factors relevant for this change, corpus data does not facilitate analysis of prosodic factors, such as stress. Therefore, we argue that a combination of corpus data and experimental data is necessary for a satisfactory analysis of the change in Russian numeral constructions.

We analyze the rivalry between two constructions involving a numeral followed by an adjective and a noun:

(1) Tam [...] ona otyskala dve staryeNOM knigi. [Krapivin 1979]

‘There [...] she found two old books.’

(2) Esli by možno bylo dostat’ dve staryxGEN knigi [...]. [Gerštejn 1994-2002]

If it had been possible to get two old books [...].

In (1), the adjective is in the nominative, whereas (2) has the adjective in the genitive. The diachronic development of the two rival constructions has not been subjected to large-scale quantitative analysis before. We show that in the mid 20th century a split took place, whereby the genitive outcompeted the nominative when the following noun was masculine or neuter, while nominative became the main rule for feminine nouns. Our CART analysis captures the interaction between time, nominal gender, and factors pertaining to the numeral.

A factor complicating the rivalry in (1)-(2) is the fact that some nouns have mobile stress. The RNC does not provide reliable information on stress, so in order to find out whether stress plays a role in the rivalry we are interested in, we conducted an experiment with 46 native speakers of Russian involving nouns with different stress patterns. Preliminary analysis suggests a limited impact of stress in general, although considerable differences among speakers and nouns have been identified. In addition to shedding new light on ongoing change and illustrating the advantages and limitations of quantitative analysis of corpus data and experimental data, our study has important theoretical implications for the study of prosodic features in inflectional morphology.

Expressing time in space: Temporal expressions in Swedish Sign Language

Anna-Lena Nilsson

An increasing amount of research on a large number of spoken languages indicates that speakers of these languages construe everyday concepts of duration, sequence, past and present spatially. Investigation of these spatial construals of time has evolved since the 1970s, using highly diverse methods (Núñez & Cooperrider, 2013). In their review article, Núñez & Cooperrider provide a detailed account of decades of research, and effectively summarize core temporal distinctions and their construals (see Figure 1, 2013:222). They also point out that time concepts such as ‘past’, ‘future’, ‘duration’, and ‘sequence’ “belong to the realm of high-level cognition: as observed in humans, they are mediated by language and culture, but are also firmly rooted in bodily experience and realized by neural mechanisms that are as yet poorly understood” (2013:220). To provide further insight into this “tangle of space and time” it will be useful to consider the production of temporal expressions in space in a signed language – a type of language not discussed in the review article.

Signed language research only began in the 1960s, with descriptions of American Sign Language (ASL) (Stokoe, 1960). From early on, signed language linguists discussed temporal expressions in terms of time lines, see e.g. Friedman (1975) on ASL, and there have since been a number of similar descriptions of time lines for several signed languages. In this study, multimodal expressions for time, where signers systematically utilize complex simultaneous combinations of lexical signs and body movements on and along such time lines, were analyzed. The analysis expands on previous studies of the signed target language production of Swedish Sign Language (SSL)/Swedish interpreters, interpreting into SSL (Nilsson (2016); Nilsson (under review)). As there was no previous research on time lines in SSL, definitions of time lines for Danish Sign Language (Engberg-Pedersen, 1993) were used.

Examples of these body movements in signing space will be shown to be based in the same spatial construals of time. We will see how systematic use of sign-internal movements, placement of signs in space, and movement of the whole body in space are combined. Distinct time lines are used to express, e.g., ‘up until now’, ‘time after now’, but also for sequential events and to keep referents apart even when no clear temporal relation is indicated between them. A variety of expressions are used for periods of time measured in years, including constructions where lexical signs with circular movements are produced while moving the body along time lines.

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What We Think About When We Talk About Money: Conceptual Blending, Distributed Cognition and the Amalgamated Mind

Todd Oakley

Conceptual blending has emerged as an influential framework for the study of meaning construction, especially among practitioners in cognitive linguistics and semiotics. Part of the appeal is its systematic treatment of diverse semiotic phenomena according to processes and principles that achieve internal consistency, such that one builds a plausible account of how words, images, and sounds in specific places conspire to generate scenes and scenarios that constitute thinking, speaking, and action (cf. Fauconnier & Turner 2002; Oakley 2012). The point of this talk is not to defend CBT as a particular theory, but to “pivot” the discussion to the philosophy of mind through a discussion of sovereign currency, one of the most emotion but least understood of social institutions.

If one surveys the range of phenomena that count as “blending,” especially cases in which the non-neural body, artifacts and social institutions comprise the proper object of analysis (cf. Hutchins 2005; Oakley 2009) one sees ample reason to believe that the framework embraces distributed cognition, the notion that the most interesting questions about cognition and meaning lie at the intersection of brain, body, and world. Even so, there are many in the blending community who claim that all the interesting work occurs intra-cranially, even as they laud the fact that the principles of blending highlight its external vehicles as a proper scope of analysis. Sovereign currency systems belie this view. For instance, Fauconnier & Turner (2002: 99) offer an analysis of money as a medium of exchange; however, money as a critical ingredient of macroeconomic systems and operates according to principles highly counterintuitive to the quotidian conceptualizations of money, debt, and deficits upon which users of a currency rely. Yet, sovereign money systems do require some form of cognitive scientific explanation.

The aim of this presentation is to specify an explicit philosophical position that does justice to a range of phenomena captured by blending as a general cognitive framework if we adopt a position similar to that of Mark Rowlands’ (2010) amalgamated mind: minds are both embodied and extended.

The focus of attention will be snippets from 2013 televised roundtable debate among journalists and economist on a proposal to mint a "trillion-dollar platinum coin" as a means of circumventing the United States Congress's requirement to raise the debt ceiling, a rule that has precipitated budget crises in the age of extreme partisan politics. The analysis will focus on the inherent tensions involved in thinking about money as a thing from the user's perspectives and as a system from the issuer's perspective, whereby recourse to the latter is typically construed in terms of magic, as evidenced by the correlated performative speech acts, such as of "wallah!" to signal conjuring. The analysis reveals that this tension issue from how human beings deal with the apparent facts of extending cognitive operations well beyond body and brain.

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Focusing on embodiment: A case study in Cognitive text linguistics

Tiina Onikki-Rantajääskö and Minna Jaakola

The paper deals with the study of literary style in the framework of cognitive grammar. We will explore embodiment and its ambience effects in author Emmi Itäranta's dystopian novel, published in Finnish (*Teemestarin kirja* 2012, Teos) and in English (*Memory of Water* 2014, HarperCollins). Itäranta's production makes for an interesting case study because she writes her novels simultaneously in English and Finnish by herself. They are thus not translations in a traditional sense, but parallel texts, which provide data for analysing how the style of a literary text arise through linguistic choices. To analyse and compare the two versions of *Memory of Water*, we apply and test the Dimensions of Construal in Cognitive Grammar (Langacker 2008; c.f. Stockwell 2009, Harrison et al. 2014, Jaakola et al. 2014). Tabakowska (1993, 2014) has suggested that DoCs could be used as a tertium comparationis in comparing different language versions of the same text, especially when the focus is on the imagery (construal) construed by the texts. Literary texts are methodologically interesting in applying the idea of construal because of their ambiguity, importance of nuances and figurative language.

The novel is characterized by abundant use of body-part metonymies which unfolds the central themes of the novel, and create a distinctive aesthetic style in the narration. In the presentation, we will introduce breathing as an example: the usages of the verb *hengittää* - breathe, and the noun *hengitys* - breathing, *henki* - breath, are frequent and central in the composition of the novel. We will apply especially the dimensions of Focusing and Subjectivity, and analyse the effect of breathing expressions. The different images of breathing extend from sentence level to the thematic level of the novel, and the leitmotifs are built up by the activation of different knowledge frames: breathing is linked to water, breathing and water are linked to continuity, breathing and water are linked to the Tea Ceremony etc. Despite of the typologically different structure of Finnish and English, the Itäranta's versions are quite similar in their construal. However, the figure/ground alignment reveals some interesting differences based on different analysability (Langacker 2008). For example, the polysemy of the Finnish noun *henki* connects the senses 'breath', 'staying alive' and 'spirit' and in this way construes the basic theme in a more interconnected way and thus creates a slightly different ambience in the novel.

Lexical and syntactic development of children, adolescents, and young adults

Anneli Pajunen and Seppo Vainio

Children, adolescents and young adults acquire a huge amount of lexical and syntactic knowledge during the period of later language development, basically during their school years. This development is, however, comparatively slow, and not everyone reaches the same level of knowledge. The most general and frequent lexemes and syntactic forms are mastered well but there is massive variation concerning less frequent lexemes and forms. Part of the variation is due to gender. We are going to discuss this variation, first, using lexical-semantic and lexical-morphological tests and, second, using narratives as data. The participants of these tests were 12- and 15-years old pupils of Finnish elementary school as well as young adults with a similar educational background (applied university students with maturity examination). There were altogether 300 of them.

All participants have taken an electronic lexical-semantic similarity test and lexical-morphological priming test, in addition to which they have written a narrative on the topic 'A Day of My Life'. Electronic tests have been analyzed in terms of frequencies, semantic and morphological class, reaction time and mistakes, age and gender. Narratives have been analyzed word-by-word (length, word class, semantic class, etc.) and by terminal units (MLTU, lexical and syntactic density, frequency profiles and lexical diversity etc.).

All our data show that differences between age groups are statistically significant, in other words, the 15-year-old are better than the 12-year-old, and the young adults are better the 15-year-old. However, gender differences in lexical knowledge are rather small as compared to differences due to inter-individual variation. Our narrative data clearly shows that both children and adolescents have great problems with writing, the male more often than the female. Differences in lexical knowledge do

not explain these problems. As university students, all our young adults possess a comparatively good linguistic competence; and male adults are as good as female ones if not better. The written data shows that males write in a more complex style than the females, and the same difference in styles is already to be seen in the elementary school narratives. – In our talk we are going to discuss correlations and possible profiles based thereupon.

On the role of argument structure constructions in Romance – a cross-linguistic perspective

Johan Pedersen and Caterina Guardamagna

In this study on the transitive motion construction, we aimed to shed light on the role of argument structure constructions in Romance (in the sense of Goldberg 1995) compared to Germanic languages. The research is motivated by the fact that, in Romance, sentence meaning is highly verb-constrained (e.g., Narasimhan 2003; Goldberg 2006; Pedersen 2013, 2016).

Syntactic operations such as the passive shift and the case marker substitution are not, as such, central in constructionist approaches to grammar – “What you see is what you get” (Goldberg 2006) – neither do they, as distributional tests, determine the object as a universal grammatical category (Croft 2001). However, conceived of as constructional variants data on their availability are useful diagnostics of the role of verbal versus constructional encoding in, e.g., Spanish and Italian:

(1) Pedro cruzó la calle (Transitive construction)

Pietro attraversò la strada

'Peter crossed the street'

(2) La calle fue cruzada por Pedro (Passive variant)

La strada fu attraversata da Pietro

'the street was crossed by Peter'

(3) Pedro la cruzó (Case marker variant)

Pietro la attraversò

'Peter ACC crossed'

In a quantitative corpus study of Spanish data, we selected the highest ranked collexemes (Stefanowitch & Gries 2003) of the transitive motion construction (top 30 verbs) and analyzed the verbal distribution on the constructional variants. The corpus data were extracted from CORPES XXI, 215 million words (Real Academia Española). Some of the verb meanings were not congruent with the transitive construction (cf. (4) with (1)):

(4) Pedro bajó las escaleras (Transitive construction, intransitive verb)

Pietro scese le scale

'Peter went down the stairs'

However, we found that only when the verb profiled a transitive meaning, congruent with the transitive construction (see (1)), both variants could be observed (see (2) and (3)). In cases of verb-construction incongruity (see (4)), only the case marker variant occurred, see (5) and (6):

(5) *Las escaleras fueron bajadas por Pedro (Passive variant, intransitive verb)

Le scale furono scese da Pietro??

'The stairs were went down by Pedro'

(6) Pedro las bajó (Case marker variant, intransitive verb)

Pietro le scese

'Pedro ACC went down'

Since the passive shift manipulates the meaning skeleton of the clause, while the case marker substitution does not, these corpus results have implications for our understanding of the role of the verb and the argument structure construction in Romance. We will discuss this comparing the corpus data on Spanish with data from Italian, English and other Germanic languages.

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Us and them in the Finnish and British media context: A look into metaphorical language

Esa Penttilä

Recent trends in the European context have shown the increase of various advocacy groups, lobbyists and populist political parties that use emotionally-loaded figurative language to push forward their agenda and this – together with the European migration crisis, Brexit, various banking and economic crises and difficulties in international cooperation in general – seems to have affected the way us and others are discussed and viewed in the European context. This development is reflected in the figurative language that is used in both public and social media, and through this metaphorical language the various groups referred to are conceptualized differently.

This study takes a look at the metaphorically loaded language used in political journalistic texts in Finland and in Britain to study how the notions of nation and Europe are viewed in terms of us and them. The analysis is based on a study of a small-scale corpus that contains articles from the major newspapers in Finland and Britain and aims to provide a comparative analysis of the conceptualizations in these two investigated linguistic and cultural contexts. Examples of concrete metaphorical expressions that will be studied include those related to home, house and building, which have been studied since the concept of Common European House propagated by Gorbachev in the late 1980s (see e.g. Chilton & Lakoff 1995). The results will be compared with other relevant studies looking at political metaphors in cross-linguistic and cross-cultural data (e.g. Musolff 2011, 2016, Möller 2014, Neagu and Colipcă 2014, Shäffner and Bassnett 2010).

In agreement with the view proposed by Musolff (2012), the analysis combines the perspective of Cognitive Linguistics, primarily conceptual metaphor theory, with a discourse-oriented approach where metaphorical language has been analyzed as a tool of manipulation. The study presents the preliminary stages of project that is supposed to be developed into more extensive analysis of figurative conceptualizations in the European context.

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What gets resonated and why? Dialogic resonance in the London-Lund Corpus 2

Nele Pöldvere and Carita Paradis

This study explores the dialogic resonance of epistemic stance constructions in a recently compiled corpus of spoken British English, the London-Lund Corpus 2. According to Dialogic Syntax (Du Bois, 2014), language users selectively reproduce aspects of previous utterances at varying levels of abstraction to make affordances for dialogic engagement. The dynamic emergence of affinities across comparable linguistic items gives rise to dialogic resonance, or the “catalytic activation of affinities across utterances” (Du Bois, 2014, p. 372). Dialogic resonance is characterised by varying levels of lexical fixedness and variability (Brône & Zima, 2014), from the identity of words to the emergence of abstract equivalence, as shown in the example retrieved from Du Bois (2014, p. 368):

(1) A: yet he’s still healthy
B: he’s still walking around

Dialogic Syntax is a relatively new analytical framework and much work remains to be done to identify the socio-cognitive goals that speakers have when they recruit different linguistic items for resonance. The aim of this study is to explore the motivations for resonance at various levels of linguistic specificity with a focus on epistemic stance constructions, and study the effect that the variability has on dialogic engagement.

The data for the study come from a recently compiled corpus of spoken discourse, the London-Lund Corpus 2 of spoken British English. The data set under investigation contains 50,000 words of face-to-face conversations in various settings. The analysis is carried out as follows. First, the data are manually searched for instances of dialogic resonance across speaker turns. The main criterion is that the extracted utterances share an object of stance that is framed by an epistemic stance construction (e.g. I’m sure she’s fine – She might be). Next, the stance couplings are analysed in terms of both structural and functional parameters (e.g. type of construction, degree of equivalence, speech act, relationship between speakers). Finally, correlations between the parameters are identified.

The results of the corpus study suggest that epistemic stance constructions resonate both at the level of constructs and abstract categories; however, there are fundamental differences between the pragmatic and cognitive effects that they create. For example, the (automatic) reuse of formally and functionally equivalent constructions is preferred in contexts where speakers signal stance convergence (Du Bois, 2007), while generalizations across epistemic categories are required in contexts of strategic stance differential for the purposes of politeness and maintenance of social relations.

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What makes a meaning? The case of the Estonian perception verb nägema 'to see'

Mariann Proos

Perception verbs, like many other verbs, tend to be polysemous in nature. My research focuses on the Estonian perception verb *nägema* 'see' and its polysemy (Proos 2014, 2016). Although 'see' is widely researched in many languages as a topic on its own (Alm-Arvius 1993; Usoniene 2001, Johnson & Lenci 2011) or in the context of other perception verbs (Divjak 2015; Ibarretxe-Antunano 1999; Viberg 1983), the Estonian equivalent *nägema* has received very little attention. In this presentation, I will try to answer the question "what makes a meaning a meaning" in the case of the Estonian perception verb *nägema* 'see'.

I have used the behavioral profile (BP) analysis method (Divjak & Gries 2006) to gain insight to the verb's polysemy. I analysed 700 sentences from the Corpus of Written Estonian. With the help of 89 semantic and morphosyntactic characteristics (or ID-tags) I was able to "map out" how the different meanings of the verb are used in natural language. I then analysed the results with hierarchical cluster analysis (HCA), also making use of cluster validation techniques (Silhouette plot and bootstrapping).

While the combination of BP analysis and cluster analysis offers the chance to look at how different meanings of the verb group together, the behavioral profile also offers a lot of other information. As so many different characteristics are annotated during the process, it also makes it possible to compare certain characteristics. Thus I was able to show which of the characteristics seem to be the differentiating factor(s) between meanings, i.e. when and why one meaning becomes another.

For my presentation, I will take this comparison a step further by using statistical techniques such as HCA and multivariate modelling. Examples of this kind of an analysis include Divjak (2010) for near-synonymy and Glynn (2014) for polysemy. As I have previously looked at the polysemy of *nägema* through a sorting task, I expect the results to mirror groups that emerged in the experimental task. This will allow for a well-founded account of how language users make their categorization decisions.

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Concreteness ratings meet metaphoricity
Gudrun Reijnierse and Marianna Bolognesi

Concreteness ratings (e.g., Spreen & Schultz 1966; Paivio et al. 1968; Brysbaert et al. 2014) are widely used in a variety of disciplines, including experimental psychology (e.g., Yap et al. 2015), psycholinguistics (e.g., Ferreira et al. 2015), and cognitive linguistics (Dunn 2015). Such ratings are typically collected by asking participants to rate the degree of concreteness of words on a 5- or 7-point Likert scale. The word ‘banana’, for instance, is rated as very concrete (5.0 on a 5-point scale in Brysbaert et al., 2014), while the word ‘idea’ as relatively abstract (1.61, *ibid.*).

Close inspection of these concreteness ratings, however, shows that words with ‘average’ concreteness ratings (i.e., around 3 on a 5-point scale) are typically accompanied by relatively high standard deviations (SD). Examples from Brysbaert et al. (2014) include ‘deluge’ (M 3.48; SD 1.69), and ‘gravity’ (M 2.86; SD 1.65). This may suggest that participants referred to different meanings of the word while rating (e.g., ‘heavy fall of rain’ versus ‘lot of things happening’, for ‘deluge’). In fact, one of the major drawbacks of concreteness studies is that words are typically presented in isolation, i.e., without context to disambiguate between the possible meanings of a word.

In this paper, we argue that concreteness ratings that display such high SDs might denote polysemous words for which a concrete and a more abstract meaning are available that get conflated in the ratings. More precisely, we connect this issue with metaphoricity, because metaphors typically align an abstract meaning to a more concrete one, packed within the same word. In this talk, we therefore investigate to what extent metaphoricity can explain the high SDs for specific nouns.

We collected new concreteness ratings for a total of 90 nouns that have both a metaphorical and a non-metaphorical meaning. Each of the 230 participants in our study provided concreteness ratings for all nouns. Half of the nouns were presented with a metaphorical definition, and half of them with a non-metaphorical definition. We calculated average concreteness scores for the metaphorical as well as the non-metaphorical meanings of all nouns.

Results demonstrate that, for most nouns in our dataset, the average concreteness scores differed significantly between the metaphorical versus the non-metaphorical meaning. We also found that, when we combined and averaged the ratings elicited for both definitions of a noun, our concreteness ratings highly correlated with Brysbaert et al.’s (2014) ratings for the same noun. We conclude that metaphoricity affects the perceived concreteness of a word, and suggest that metaphoricity should be taken into account in future concreteness rating studies.

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The grammar-lexicon distinction

Sarah Rosenbech Nielsen, Violaine Michel Lange, Maria Messerschmidt, Peter Harder and Kasper Boye

This paper deals with the distinction between grammar and lexicon. It has two aims: First, to investigate the distinction through predictions made by a usage-based linguistic theory in a language production paradigm. Second, to link these findings to a neuro-biological model of grammar and lexicon.

The usage-based theory by Boye & Harder (2012) conceives of grammatical elements as ancillary in relation to lexical elements. Grammatical elements are defined as elements that are by convention discursively secondary (background) and dependent on lexical elements, which are potentially discursively primary (foreground). This entails that grammatical words must be retrieved and processed at a later stage than lexical words, and furthermore that grammatical words are paid less attention to than lexical words.

Ullman's (2001) neuro-biological model posits that the cognitive underpinnings of the grammar-lexicon distinction are the procedural and declarative memory systems. In this model, grammar is linked to procedural memory together with general implicit knowledge. Lexicon is on the other hand associated with declarative memory, which handles arbitrary information.

We test the grammar-lexicon distinction in a minimal contrast multi-word production design using lexical verbs (full verbs) and grammatical verbs (auxiliaries). In the experiment, participants produce the verbs in sentences that are identical except for the status of the verb as lexical or grammatical. On the basis of Boye & Harder's theory we hypothesize that grammatical verbs will have longer reaction times, shorter durations and a higher error rate compared to lexical verbs. Differences between the lexical and grammatical conditions are discussed.

In order to link these findings to the declarative-procedural model, we include a measure of procedural memory, namely the Serial Reaction Time Task which is said to measure implicit learning. In line with Ullman's theory, we hypothesize that procedural memory will correlate with reaction times for the grammatical condition of our experiment, but not the lexical. Correlational analysis and implications thereof are discussed.

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Narrating strange stories: structural language impairments and internal state reference in ASD

Jens Sand Østergaard

The ability to narrate a story involves integrating quite a complex web of information: who did what to whom and why? In recounting the events of a story, reference to the mental states of characters is often a good way of retelling the story concisely and coherently for an audience. However, this requires both an awareness of mental states, as well a language rich enough to express them.

Children with autism spectrum disorders (ASD) are often characterised as having a specific impairment in their ability to represent other people's mental states i.e. a 'theory of mind'-deficit (Baron-Cohen 1997). Recent studies have, however, highlighted that problems associated with social interaction and empathy for individuals with autism are in large part associated with more general deficits and developmental delays in acquiring age-appropriate linguistic abilities – with early language

ability being one of the primary predictors of how well they will be able to socially interact with others later in life (Fein et al. 2013).

A means of examining this link between language and social skills is through narrative elicitation tasks in which participants are presented with a short story and asked to re-tell it in their own words while being recorded on a microphone (Norbury & Bishop 2009). By subsequently transcribing each participants re-telling, it is possible to identify linguistic markers of their retelling which point to expressive-receptive language impairments, such as ungrammatical sentence structures and formulation errors. However, it is also possible to develop socio-cognitive indices of the children's ability to retell a story, such as their ability to recall events from the story and retell it coherently with emphasis on characters' intentions e.g. verbs and adverbs signifying beliefs and emotions (i.e. "He is afraid that people will recognize him in his costume").

In an exploratory study using an experiment in narrative elicitation for children with ASD (n=17), I found that the children's use of internal-state language (i.e. references to beliefs, thoughts and desires) was significantly associated with their ability to use syntactically more complex sentential complements (e.g. that-clauses) – that is, the more linguistically skilled children were able to produce narrative retellings with significantly more (and more complex) references to characters' emotions and beliefs. The results and limitations of this study are discussed, as well as their possible consequences for a theory of mentalization in autism.

Semantic network of word-association sequences in Japanese and Swedish

Misuzu Shimotori

The present study explores the correlational strength between learners' L1 and L2 word-association patterns, which I intend to measure by means of semantic priming effect (cf. Cramer 1968, Collins and Loftus 1975, McNamara 1992, Lucas 2000, Hutchison 2003). According to Hutchison (2003:786), the semantic priming effect refers to "the consistent observation that people respond faster to a target word (e.g., cat) when it is preceded by a semantically related prime (e.g., dog) rather than by an unrelated prime (e.g., table)". Through this research, I address the following question: What semantic priming types can be observed in the word-association sequences of learners' first and second languages, and are they similar or different to that of their L1 and L2?

With respect to assessing speakers' word knowledge, several significant aspects can be addressed concerning speakers' word-association patterns; however, this study will account for forms of semantic priming that can be performed by a fundamental memory retrieval mechanism, i.e. the spreading-activation model of memory (cf. Quillian 1967, Collins and Loftus 1975, McNamara 2012).

A word-association test is administered to four groups: 1) native speakers of Japanese, 2) native speakers of Swedish, 3) native speakers of Japanese possessing high-level proficiency in Swedish, and 4) native speakers of Swedish possessing high-level proficiency in Japanese. Participants are to be given 30 stimulus words, and they will provide three associations for each one. The chain of priming between stimulus and response will be classified; not only between stimuli and primary responses, but between stimuli and secondary responses, as well as between stimuli and tertiary responses. The stimuli are selected from three sense adjective categories: dimensional, temperature, and taste.

Several semantic relationships will likely fall into multiple classifications during the associative and/or semantic priming processes. In terms of pure associative priming, there are four types: phrasal (co-occurrences), episodic, mediated (indirectly related concepts), and asymmetrical (words that are related associatively in one direction only). As for semantic priming, its forms include synonyms, antonyms, and category members, in addition to property, super/subordinate, functional, and script relationships. The result clearly indicates that the semantic priming effect is observed in both L1 and L2 word-association sequences. The important conclusions are that: 1) the types of semantic priming observed among the word-association sequences differ between L1 of Japanese and L1 of Swedish, and 2) the priming patterns in ones' L1 will likely affect semantic priming patterns in their L2.

Conceptualizing Aspect in Slavic: Evidence from Aktionsart and Narrative Sequences in Russian

Svetlana Sokolova, Elena Petrukhina and Dmitrij Egorov

One of the key concepts in Cognitive Grammar is the notion of BOUNDEDNESS (Langacker 1987, Talmy 2000). Perfective processes are bounded in time and carry information about the beginning and end of an activity, while imperfective processes are unbounded. However, among Slavic languages we observe a considerable divergence in the functioning of IPF and PF verbs. In Russian the use of IPF verbs is expanded (similar to other East Slavic languages and Bulgarian), whereas in Czech (as well as in Slovak, Slovene) PF verbs are more active (Dickey 2000, Petrukhina 2011). With regard to combinatorial properties and major functions of PF and IPF, the majority of scholarly works define the categorical meanings of PF and IPF on the basis INTEGRITY (Maslov 2004, Bondarko 2005, Dickey 2000) or a temporal BOUNDARY (Vinogradov 1980, Jakobson 1985, Tatevosov 2015). Which idea is more crucial for Slavic aspect and how do we account for the mismatches in the use of IPF and PF across Slavic languages?

We show that Slavic languages can be characterized by different profiling strategies. For Russian verbal aspect, the idea of a LIMIT as a temporal BOUNDARY between adjacent situations is more crucial. For Czech aspect, the idea of INTEGRITY, an undifferentiated beginning-end of an action, is more important.

These categorical differences between the Russian and Czech aspectual systems are most salient in aspectual verbal word-formation (Aktionsart) and the use of aspect in the narrative genre. Russian has a productive class of verbs prefixed in *za-* (*zakričat* 'start crying') and *po-* (*pojti* 'start walking') that refer to the initial stage of an action. Czech, like other West Slavic languages, lacks word-formation patterns denoting the beginning of an action. In Czech narrative sequences we find a big variety of aspectual forms. Activities that are included into the narration are often presented as an open process via IPF verbs (Stunová 1993: 117-126). Russian narrative sequences, however, have a tendency to mark the boundary of actions with the help of PF verbs. If the narration includes non-terminative activities or processes, they are integrated into the text as ingressive predicates with the help of prefixes *za-*, *u-*, *po-* or analytical constructions with phase verbs (*načat* 'begin').

To check how strong this tendency is, we present a quantitative study of Russian narrative sequences (collected from the Russian National Corpus: <http://ruscorpora.ru>). We analyze how the choice of aspect depends on such variables as the number of verbs in the sequence, register (narrative or dialogue), subject switch, verbal types and the semantics of verbs in the sequence, the presence of temporal modifiers associated with a certain aspect (*celyj čas* 'the whole hour' (IPF); *snačala* 'first' (PF)).

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Syntax influences lateralized imagery for sentences

Sofia Stroustrup and Mikkel Wallentin

Syntax is often thought to represent the core of language, working independently of semantic and imaginary processes (Avrutin, 2006; Chomsky, 2002). Here, we show that listeners take syntax into account when producing stick figure drawings from heard sentences. These findings are in line with theories suggesting a two-way interaction between language and non-linguistic functions (e.g. Tylén, et al., 2010).

167 Danish high-school students listened to sentences that varied whether a male or a female character 1) was mentioned first, 2) was the agent or recipient of an action, and 3) was the grammatical subject or object of the sentence. Their task was to quickly draw the content of the sentence on a piece of paper.

The experimental sentences were constructed using eight Danish transitive verbs: "slå" [hit], "sparke" [kick], "kysse" [kiss], "trække" [pull], "forfølge" [follow], "skubbe" [push], "udpege" [point out], "skyde" [shoot]. Verbs were clearly imageable, had simple agent-patient relationship with a default scenario unfolding in the horizontal plane. Sentences combined each verb with pronouns describing a male and a female character. Similar to English, Danish has case marked personal pronouns: "han" [he], "hun" [she], "ham" [him], "hende" [her]. Danish also allows both subject-verb-object (SVO) and object-verb-subject (OVS) word order. By including active and passive sentence forms, we constructed 2x2x2 sentences for each verb, e.g.:

Hun kysser ham.
Ham kysser hun.
Hun kysSES af ham.
Ham kysSES hun af.
Hende kysSES han af.
Han kysSES af hende.
Hende kySSer han.
Han kySSer hende.

The sentences were divided into eight sets, using each verb and sentence construction only once per set. Participants were subjected to one set of eight sentences.

Drawings were coded for whether the male character was placed to the left in the image, and data were submitted to a linear mixed-effects logistic regression analysis using the `glmer()` function in R incorporating a maximum likelihood model fit (Laplace Approximation).

Placement of the male and the female character was significantly affected by naming male character first ($z=5.5$, $P<0.001$), by male character being active ($z=9.2$, $P<0.001$) and by male character being grammatical subject ($z=3.1$, $P<0.005$). Replicating previous findings, we thus show that the first named character as well as the agent of the sentence tends to be drawn to the left in the image, probably reflecting left-to-right reading direction. But we also find that the grammatical subject of the sentence has a propensity to be drawn to the left of the object.

We interpret this as suggesting that syntax carries discursive meaning as an attention allocator. It also highlights how language influence processes hitherto thought to be non-linguistic.

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Expecting the expected: Semantic incongruities are judged differently depending on the source during sentence judgment tasks.

Alexander Strukelj, Richard Andersson and Carita Paradis

How well can people identify semantic incongruities, which are often used in linguistic research and experimental psychology (e.g., Clifton, Staub, & Rayner, 2007)? Acceptability judgment tasks measure how natural a sentence sounds (e.g., Dąbrowska, 2010), and are often used with sentences with or without incongruities. These tasks evaluate the intuition of the participant, which is not always perfect, but can these judgments also be affected by expectation and bias? Two experiments were performed, where participants read either semantically congruent or incongruent sentences, rating each sentence immediately after reading it. Sentences were given without explicit framing in Experiment 1, but were said to be from either “well respected” or “less respected” news sources in Experiment 2. We created the semantic incongruities by replacing a word with its antonymic partner, such as ‘soft’ instead of ‘hard’, ‘good’ instead of ‘bad’, and ‘large’ instead of ‘small’. Previous research suggest that participants have difficulties differentiating between grammatical and pragmatic violations, between grammaticality and acceptability judgments (Ariel, 2010, p. 77). We therefore used separate syntactic and semantic acceptability judgment tasks to investigate how connected these two judgments would be. Two additional judgment tasks allowed the participants to state their interest in reading the rest of the article based on the form and the topic of the sentence, resulting in form-based and topic-based interest ratings.

In Experiment 1, no significant differences were found for any rating. In Experiment 2, syntactic acceptability, semantic acceptability, and form-based interest ratings decreased significantly for sentences from less respected sources compared to well-respected ones. Specifically, the difference in semantic acceptability ratings was significant for semantic incongruities, showing that semantic incongruities were correctly identified for less respected sources only. Surprisingly, topic-based interest ratings increased significantly for less respected sources compared to well-respected ones. The results suggest that people have a negative bias toward the form in less respected sources, considering them more prone to mistakes and thus more likely to justify or overlook errors in well-respected sources. Thus, people might not always be accurate when identifying semantic incongruities in judgment tasks, as they only correctly identified them when expecting less respected sources in this study. However, the results also suggest that people have a positive bias toward the topics, possibly considering them more interesting or more engaging, and thus more likely to want to read them. In this study, these biases arose from expectations, not manipulations, showing that judgment tasks are affected by expectation and bias. These results have implications for research that uses sentence judgments as an experimental task.

An Auditory-Visual Selectional Restriction on the Formation of Mimetic Verbs in Japanese

Yukio Takahashi

Jackendoff (1990, 2002) presented a conceptual-semanticist framework of the semantics of language that internalizes selectional restrictions on conceptual amalgamation. This paper argues that an auditory-visual selectional restriction is posed on the formation of conceptual structures of mimetic verbs of Japanese.

Kageyama (2005) argues that the semantics of the mimetic light verbs of the form "R-R-sur-u" (henceforth, MLV) in Japanese should be a combination of (i) the lexical conceptual structures provided by the ending of the light verb "sur-u" and (ii) the interpretation of the onomatopoeic elements describing auditory and visual properties:

(1) Reduplicated Mimetic Verbs in Japanese

a. gata-gata-sur-u

"(something) produce noises, due to the loosely connected parts" (auditory)

"(something) be loosely connected" (visual)

b. kata-kata-sur-u

"(something) produce smaller noises, due to the loosely connected parts"

"(something) be loosely connected"

The verbs in (1a, b) include reduplicated onomatopoeic elements that have either voiced or voiceless obstruents. These examples describe (i) the sounds made by the events and (ii) the manner in which the thing produces the sounds. The unreduplicated forms in (2a, b) behave differently. They are formed by attaching a suffix "tuk-u" ("attach a thing to something") to the onomatopoeic stems:

(2) Unreduplicated Mimetic Verbs in Japanese

a. gata-tuk-u "(something) loosely connected"

b. *kata-tuku

Note that the form in (2b), the one that has an onomatopoeic element with an initial voiceless obstruent, describe no visual impression. An attested case with an initial voiceless consonant in (3b) describes no auditory process:

(3) a. kasa-kasa "(making) rustling noises," "dry"

b. kasa-tuk-u "(surface of things) be dried," *"make rustling noises"

The unreduplicated tokens of the mimetic verbs (henceforth, MV) in (2) and (3b) do not describe auditory properties of the events.

This paper points out that there is a restriction on the formation of MVs. The process refers to a restriction in (4):

(4) Selectional Restriction on the Conceptual Structures of MVs

The conceptual structures of MVs internalize an obligatory conceptual entity [Visuality].

Thus, the onomatopoeic element in (2a) and (3b) can be amalgamated to the entity [Visuality], while that in (2b) cannot. The elements in (2a, 3b), "gata-" and "kasa-," can denote visual properties, so that they form MVs. The entity [Visuality] functions as an interface that connects the linguistic module with the auditory-visual modules.

Two observations are in order to support our argument. First, the selectional restriction is applied to the event function GO with an internal semantic function VIA in the sense of the conceptual semanticist framework. The MVs describe situations in which a thing repeatedly moves on something. It is arguable that the suffix "tuk-u" contributes to the formation of conceptual structures in which the movement takes place on the surface of things. Second, the binary distinction of voiced vs. voiceless of onomatopoeic elements implies a binary distinction in the visibility of the movements described by voiced and voiceless onomatopoeic elements. It is a generally accepted assumption that the phonological contrast voiced vs. voiceless of the onomatopoeic elements in Japanese correspond to the visual and auditory distinction of the sizes, as depicted in (1): the voiced instance as found in (1a) describes a visual and auditory size that is distinctly larger than the one described in (1b). Crucially, some MVs describe non-auditory but visual states, cf. ira-tuk-u and ira-ira-sur-u (be irritated).

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The impact of horizontal and vertical motion on the structure of motion expressions in Estonian

Piia Taremaa

Experiencing vertical motion is considerably different from that of horizontal motion. Firstly, the starting and final point of vertical motion is often visually observable, which is not necessarily the case with horizontal motion. Secondly, and as opposed to horizontal motion that associates with force dynamic characteristics much more modestly, vertical motion entails force dynamics in that moving upwards needs much energy and moving downwards is fast and effortless. Evidence suggests that these experiencing particularities are closely related to the language of horizontal/vertical motion (e.g., Meteyard et al. 2012). Furthermore, it has been shown that aspectual meanings have often a horizontal/vertical motion basis (Tragel & Veismann 2008).

Nevertheless, the impact of the direction of motion on the structure of language, and motion expressions in particular, is rarely discussed (for a rare exception, see Nikitina 2009). The current corpus study aims to analyse the structure of motion clauses in Estonian with respect to horizontal/vertical motion to contribute to the research into motion events (Talmy 1985) and the goal-over-source principle (Ikegami 1987). The motion clauses (N = 6900) are taken from the written corpora of Estonian and are compared on the basis of the meaning of the verb. This can either be a motion verb which expresses horizontal (N = 59; e.g., *kõndima* 'walk'), or vertical motion (N = 10; e.g., *kukkuma* 'fall').

The study focuses on the typical semantic units (e.g., Goal) of motion clauses, as well as on the formal characteristics of motion verbs. The following main results can be outlined. In general, verbs of horizontal motion are more likely to combine with spatial expressions than verbs of vertical motion. Verbs of vertical motion have a strong tendency to be combined with telic expressions (i.e., Source, and Goal), and also with Cause, and Result. The depicted mover in the clauses of vertical motion is frequently an inanimate one, and the verb tends to be inflected for the past tense. Verbs of horizontal motion are very likely to co-occur with atelic expressions (mainly with Location, and Trajectory) and the clauses depict typically animate motion. In addition, verbs of horizontal motion are frequently in the present tense.

These results add to the growing body of knowledge on motion events and concur with the well-attested fact that differences in experience result in differences in linguistic expressions (Harris 1954; Johnson 1987).

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A role for analogy in second language teaching: Written analogical corrective feedback in the EFL classroom

Kavita Thomas

Considering second language acquisition, Bybee (2008, 2010) argues that analogy is an underlying mechanism behind the generalization of grammatical constructions, where varying the range of types in a pattern enables practice of the analogical extension of the pattern in language learning. In this presentation, a role for analogy in corrective feedback in second language pedagogy is presented. Analogical corrective feedback involves provision of an exemplar with corrected form and similar meaning to a learner's erroneous form which must be decoded to understand the correction and generalized to repair the original erroneous utterance, for example "children enjoy sweets" in response to "kids likes candy". This novel form of corrective feedback is motivated by mutual analogical alignment research in the psychology of learning (Kurtz et al, 2001; Gentner et al, 2003), Craik and Lockhart's levels of processing model (1972; 1990) and syntactic priming in dialogue (Branigan, Pickering & Cleland, 2000; McDonough & Mackey, 2006).

A number of studies on corrective feedback in second language acquisition have compared alternative forms of corrective feedback; for example, metalinguistic corrective feedback involves the provision of a rule and exemplar-based feedback provides a model of the correct structure. In many of these studies however, corrective feedback differs with respect to more than one variable, as both explicitness of evidence of error and mode of correction (exemplar vs. metalinguistic rule) often differ. The present classroom-based study holds explicitness constant and varies mode, comparing exemplar-based direct correction, metalinguistic corrective feedback and exemplar-based analogical corrective feedback in a pretest, posttest, delayed posttest design where groups received different forms of corrective feedback on the same errors in written texts and a control group received no indication of error. Learners corrected all errors following written corrective feedback during training. The study focused on English subject-verb agreement errors for Swedish L1 upper secondary students (n=54). Performance was assessed by timed and untimed grammaticality judgment and sentence completion tasks. Results indicate a slight tendency for the analogical feedback group to improve on untimed but not timed tasks although these findings were not significant. A similar earlier study into oral corrective feedback on English subject-verb agreement with Swedish L1 upper secondary students found that the analogical feedback group tended to perform below pretest level on the immediate posttest but then improved to pretest levels or higher on the delayed posttest. This finding was not seen in the current written corrective feedback study where feedback and learner revisions had permanence, unlike in the oral corrective feedback study.

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Using a dictionary to identify metaphors in historical data: Questions and challenges

Heli Tissari

Steen et al. have been using a dictionary to decide whether words in Present-day English texts have been used metaphorically (Pragglejaz Group 2007, Steen et al. 2010). Here, their idea was adapted to research on 18th century English, and virtue was selected as a topic. Morse (2000) has claimed that the 18th century was the age of virtue in England, because people discussed it so much. The data came from the sub-period 1710-1780 of the Corpus of Late Modern English Texts, version 3.0, which totals 10,480,431 words. A group of words denoting virtues was selected: charity, chastity, diligence, humility, kindness, patience and temperance, 2,996 occurrences in all. The analysis was conducted by reading all the sentences where these words occurred in order to see if virtues were discussed as if they were something concrete rather than something abstract. A list of 57 potential source domains for metaphors was used to name the metaphors (Goatly 1997: 48-49). The Oxford English Dictionary was used to decide if the words – above all, verbs – which suggested a concrete reading had a primary sense which suggested that virtues were identified, for example, with people, their behaviour or physical objects in the 18th century. The result was that in over 60% of the sentences, virtues were not discussed like abstract matters; instead, they were very much associated with people and their behaviour. The result suggests that virtues were not abstract after all. However, the analysis was challenging, because the Oxford English Dictionary did not always clearly tell whether an 18th century word suggested that virtue was something concrete or metaphorical. Sometimes the word in question simply had too many different senses. However, there were also other challenges. For example, sometimes the dictionary makers suggested that the word could be used both in a literal and metaphorical sense, while sometimes they did not mention the metaphorical option, but included it in the examples. The plan for this paper is to re-analyse 1,781 sentences representing the nouns diligence, kindness and patience, in order to record the decision-making process in detail. It will then be possible to report what kind of decisions had to be made and to evaluate those decisions. It will also be possible to evaluate how much a second round of analysis will change the original interpretation of the data and why. Hopefully, I can conclude by suggesting how the Oxford English Dictionary could be used to analyse historical data. I would also like to use the opportunity to discuss any remaining problems with colleagues.

Linguistic dimensions of cognitive decline in Huntington's disease

Antonia Tovar, Jesús Ruiz-Idiago, Celia Mareca, Edith Pomarol-Clotet, Aina Gari, Vitor Zimmerer, Pedro Roy-Millán, Joana Rossello and Wolfram Hinzen

Huntington's disease (HD) is an inherited autosomal dominant neurodegenerative disorder. While motor and neuropsychiatric symptoms are the core features of the disease, cognitive impairments are also widely recognized, including impairments in 'theory of mind' (ToM). A recent study (Hinzen et al., 2016) has for the first time systematically profiled linguistic decline in this population based on an analysis of spontaneous speech, demonstrating that HD affects the grammatical organization of language and that it does so even in pre-symptomatic patients who lack motor symptoms. Here we aimed to replicate these results in a different sample and to further explore the cognitive significance of language disintegration in HD, in a range of cognitive and ToM-related tasks. The sample consisted of 8 pre-symptomatic gene-carriers, 8 early symptomatic, and 16 controls. All participants were administered a neuropsychological test battery (Verbal fluency test, STROOP test, Trail Making Test A-B, Symbol-Digit Modalities Test, MMSE, Boston Diagnostic Aphasia Examination test, Word Accentuation Test). Test materials: 1. A novel sentence-picture-matching (SPM) paradigm in which participants had to select the most appropriate of three images based on their comprehension of sentences with ToM content, with both factive complements, e.g. The man knows it is warm outside and non-factive ones, e.g. The man thinks it is warm outside. 2. Participants watched two short videos, one non-verbal, one verbal and narrated their contents, which required reasoning about mental states of the story protagonists. 3. Spontaneous speech samples were obtained based on an open interview and comprehensively linguistic analyzed. Results indicated systematic structural changes in language affecting its most standard functions such as reference or clausal embedding as required for reference to mental state contents, including in pre-symptomatic gene-carriers, whose neuropsychological scores were otherwise normal. Stage 1-2 patients performed significantly worse on the SPM task, performing worse on non-factives than on factives. All patients except one were at chance in understanding the nonverbal video. These results suggest that language disintegration and cognitive decline in HD are closely related. Language both mediates ToM understanding in stage 1-2 patients, as shown by their difficulty to comprehend the ToM-related content in a non-verbal video, and it is also impaired, leading to difficulties of grasping the meaning of complex sentences describing mental states (SPM), which moreover correlated with their narrative performance.

Noli me tangere? – a corpus-based study of the role of touch in the metaphorization of the mental phenomena in English and Polish

Marcin Trojszczak

The embodied nature of conceptual metaphors has been long discussed in cognitive linguistics literature (Johansson Falck & Gibbs 2012; Lakoff & Johnson, 1999). However, despite a great deal of research (see, for instance, Casasanto & Gijssels, 2015; Zlatev & Blomberg, 2016) there is still no consensus about the role of the situated embodied experience in metaphorization as various aspects of this process require further analyses (Mahon, 2015; Wilson & Foglia, 2015). Among the elements needing to be explored in more detail is the role of sensory modalities, especially touch (see Fulkerson, 2014), in the creation of conceptual mappings.

The present study aims to push forth new research on the role of touch in metaphorization by presenting a corpus-based qualitative and quantitative corroboration of one of the most recent proposals in the field of conceptual metaphor, the Theory of Objectification (Szwedek, 2011, 2014). On this account, the process of metaphorization is based on the physical object schema which is created ultimately through tactile interactions with material objects. By claiming that the experience of density (physicality) through touch is the basis of metaphorization, the Theory of Objectification not only offers a convincing solution to the problem of abstract/concrete distinction, but also sheds more light on the nature of this process in the evolutionary perspective. On a more methodological note, adopting this framework facilitates linguistic analysis and helps to avoid an ad infinitum proliferation of new types of metaphor.

The study consists of four parts. First, it presents a theoretical framework of the research, including the embodied and situated nature of cognition, conceptual metaphor, Theory of Objectification, as well as previous studies in this field. Second, it discusses the methodological workbench of the study, i.e. a corpus-based approach, together with the employed corpora and software. The third part presents original empirical research into the role of touch and tactile qualities

in the conceptualization of cognitive phenomena, such as mind, thought, paying attention, and problem solving in English and Polish. The last part is devoted to the discussion of qualitative and quantitative empirical data, as well as some theoretical and methodological issues raised by the Theory of Objectification, including its limitations related to the role of other sensory modalities, in particular vision, in the process of metaphorization.

Overall, the present study provides an extensive cross-linguistic support for the role of touch in the metaphorization of mental phenomena and makes a case for further research that would include other languages and abstract domains.

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Perceptual and symbolic adaptations in prehistoric semiotic behavior

Kristian Tylen, Sergio Gonzalez de La Higuera Rojo, Katrin Heimann and Riccardo Fusaroli

Recently, there has been a great interest in connecting archeological findings to knowledge and hypotheses about cognitive evolution including the evolution of language. Among the evidence discussed are line carvings, as they can be found in stone and ostrich shells dating back as long as 100 ka. It has been suggested that developments in line patterns over time are related to adaptations for potential symbolic value and function (Christopher S Henshilwood, d'Errico, & Watts, 2009; Christopher S. Henshilwood et al., 2011; Hodgson, 2014; Texier et al., 2013). In a series of experimental studies, we investigate whether the development of early line patterns stretching over a period of approx. 70.000 years is an expression of an adaptive process of functional optimization for human perception and cognition, that is, if line carvings evolve over time to become more salient, reproducible, intentionally expressive and memorable. We will present evidence from three experiments using engraved line patterns from early archeological records as stimuli to test a set of related hypotheses: 1) Later patterns are more perceptually salient than earlier ones, 2) later patterns are easier to remember and reproduce than earlier ones, and lastly 3) later patterns are more likely to be experienced as intentionally produced by a human with an aesthetic/symbolic purpose. Results suggest that the archeological findings indeed show traces of adaptive development with later patterns being more perceptually salient, easier to remember and more likely to be interpreted as intentionally produced than earlier patterns.

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Interaction, cognitive diversity and abstraction

Kristian Tylén, Riccardo Fusaroli, Pernille Smith and Jakob Arnoldi

Capacities for abstract thinking, category-formation and problem solving are central to human cognition. While we are often inclined to relate such reasoning processes to individual minds and brains, they may in fact be critically facilitated by human-specific modes of collaborative social behavior and shared attention. When representations are socially negotiated among two or more individuals, they come to accommodate more variability due to differences in perspectives, experience and cognitive style, which is likely to lead to more abstract representations (Alterman, 2007; Bjørndahl, Fusaroli, Østergaard, & Tylén, 2015; Schwartz, 1995; Tylén et al., 2014). In an experimental study, we test the hypothesis that constitutive properties of social interaction - diversity in cognitive styles, knowledge and experience - enhance cognitive processes of abstraction. Through three sessions of increasing complexity, individuals and dyads categorized aliens based on combinations of features such as the shape and color of their body parts. To assess the character of participants' evolving categories, after each training session they were presented to a new test set of aliens that differed in appearance, but shared relations among features with aliens from the training set. We found that dyads outcompete individuals in categorization accuracy across levels of complexity. We also found that this effect is due to the more abstract and rule-based character of dyads emerging representations as evidenced by their performance on test items. Lastly, we show that variability in performance among dyads is significantly predicted by analysis of dyads members' conversations: If dyad members use more diverse vocabulary they perform better supporting our predictions.

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Metaphoric meaning making and multimodality in films: An expressive movement model approach

Jose Manuel Ureña

This study explores visual and multimodal metaphors in *Faust*, a German Expressionist silent fiction movie by Murnau (1926). The film was chosen for analysis because Murnau's extreme formal precision subserves a matrix of scenes where many shots have a figurative meaning. In fact, Murnau's work is "a forest of symbols" and because of these symbols, he is considered "the poet of the silent cinema" (Elsaesser 2000: 252). It is shown that interrelating psychocinematics (Shimamura 2013b), an interdisciplinary scientific field of enquiry, with the multimodal metaphor and expressive movement model (Kappelhoff & Müller 2011) provides a more comprehensive insight into how figurative thought influences psycho-cognitive processes in the moviegoer's mind as they dynamically unfold in their cinematic contexts.

For example, the opening scene of *Faust* (from 1:12 at <https://www.youtube.com/watch?v=Flnxq2HMOqA>) features the horsemen of the Apocalypse vigorously riding their way to Earth to murder mankind. Smoke, the source of the metaphor MOVING CLOUDS ARE WILD SMOKE, is part of this setting. The smoke clouds appear on screen, quickly expand towards the right in front of the horsemen, and vanish from the screen, after which the process begins again. This sequence occurs at very short time intervals. To the viewer's eye, this frantic visual activity closely interacts with and is dramatically affected by the up-and-down movement of the riders and horses and movement of their capes and manes. This configuration alters the observer's perception of the types of movement occurring and their relative interrelation as the action unfolds in the shot.

This psychological effect builds upon two visual metaphors, FICTIVE MOTION IS UP-AND-DOWN MOVEMENT and FICTIVE MOTION IS STATIONARINESS. This is possible because the highly dynamic visual activity in this scene involves plenty of movement by the three riders and their horses, but in reality no motion* at all occurs. These two metaphors then have a critical bearing on the perceptual experience of the observer, who is illusorily biased towards sensing the fictive motion of the horsemen as real. This is known as visual illusion of motion (Thompson 2013: 126). In addition, the illusion of motion of the characters in this shot is so well executed that the spectators become directly involved in the action. The objective is for them to feel as though they were moving along with the horsemen from the same angle as the static camera, which is filming the scene within one single frame. Despite the absence of camera motion and moving frames, viewers develop an imaginative impression of self-motion or imagining moving (Thompson *ibid.*).

The visual illusion of motion and the imaginative impression of self-motion cued by the staging of the horsemen and associated entities are specific forms of cinematographic expressive movements, giving rise to a rich expressive movement unit.

* I am referring to motion as a subtype of movement that entails moving through space. Accordingly, one may be moving in place with no implication of motion (e.g. when moving one's head to a song). Stationariness should be understood here based on the dictionary sense "remaining in place", which is compatible with moving in place, but incompatible with motion

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Applied Cognitive Linguistics in the EFL Classroom – Introducing New Vocabulary Through Prototype Theory
Andreas Wirag

As an emerging trend in Applied CL, the talk explores the use of CL-inspired methodologies in vocabulary acquisition research (Boers & Lindstromberg, 2008). The paper presents the results of a quantitative-empirical study in the EFL classroom ($N \geq 320$) that assessed whether an innovative approach to teaching EFL lexicon to students based on Prototype Theory might prove more effective than the established, structuralistic method of teaching unfamiliar words to learners (as represented by the Oxford Learner's Dictionary).

Widely recognised evidence in Cognitive Linguistics and Psychology demonstrates that subjects readily distinguish between best instances of a category, e.g. a blackbird or sparrow for <bird>, and less representative, peripheral exemplars of the same word, e.g. ostrich or penguin for <bird>, in a hierarchy of graded typicality (Rosch, 1975; Rosch & Mervis, 1975; Aitchison, 1999). While central exemplars appear to correspond to the meaning of the category word in a comprehensive and intuitive manner, structuralistic definitions have been shown to frequently mis- or underdefine word meaning to learners, as they attempt to recover the intended meaning from disjointed semantic features (Nesi, 2000; Beck, McKeown, & Kucan, 2013). Based on these findings, the learner study contrasted the efficiency of prototype-based definitions that made use of best instances of word use with the traditional definition format, as represented by the Oxford Advanced Learner's Dictionary. As an illustration, compare the opposing formats in the definition of EFL learner words <crowbar> (“a straight iron bar, usually with a curved end, used for forcing open boxes and moving heavy objects”, Oxford definition; “an iron instrument that burglars use to break into your house, for example, to force the door open”, Prototype definition) and <ubiquitous> (“seeming to be everywhere or in several places at the same time; very common”, Oxford definition; “for example, what God is to very religious people; he seems to be in everything”, Prototype definition).

In line with previous Applied CL findings on the efficacy of prototype-informed approaches to teaching lexicon to EFL learners (Ostermann, 2015; Xia & Wolf, 2010), study results demonstrate that prototype-based definitions outperform the structuralist format in EFL student (a) retention of correct word senses, (b) reading comprehension of texts based on the introduced vocabulary, and (c) perceived difficulty of the definitions. The study was conducted in a Pre-Posttest-Control Group Design (Campbell & Stanley, 1963), and controlled for (i) definition length, (ii) lexical difficulty of definitions, and (iii) time-on-task across conditions.

Can you play with fire and not hurt yourself? A comparative study in idiom comprehension between individuals with and without Autism Spectrum Disorder

Mila Vulchanova, Sobh Chahboun, Valentin Vulchanov, Rik Eshuis and David Saldaña

Individuals with High functioning autism (HFA) are distinguished by relative preservation of linguistic and cognitive skills. However, problems with pragmatic language skills have been consistently reported across the autistic spectrum, even when structural language is intact. Our main goal was to investigate how individuals with HFA process idioms as a type of figurative language, and, specifically, how they integrate information from multiple sources (e.g. visual modality and language) in this process. In this study, we were interested in the extent to which visual context, e.g., an image corresponding either to the literal meaning or the idiomatic meaning of the expression can facilitate responses to such expressions. Four categories of figurative language expressions -3 idiom categories and 1 type of metaphors- were included: biological idioms, cultural idioms, instructive idioms (proverbs) and novel metaphors. Participants with HFA and their typically developing peers (matched on intelligence and language level) had to complete a sentence-picture matching task for idioms and their target meaning represented as images. On half of the trials, the expressions were presented visually on a computer screen, and auditorily via loudspeakers, on the other half. We hypothesized that since individuals with HFA have been reported to have a tendency for literal interpretation, they would have difficulties in appreciating the non-literal or extended nature of idioms and figurative language in general. Analyses of accuracy (ACC) and reaction times (RTs) showed clearly that the HFA participants performed at a lower level than their typically developing peers. In addition, the modality in which the stimuli were presented turned out to be an important variable in task performance for the more transparent expressions: The individuals with HFA showed more errors and greater reaction latencies in the auditory modality compared to the visual presentation modality of the language

stimulus, implying greater difficulty in oral language. We also found differences in performance depending on the category of the expression. Participants had more difficulties understanding the cultural and instructive idioms. This research highlights the importance of the modality the cues are presented in and the way the comprehension of figurative language can differ between typically developing individuals and highly verbal individuals with autism. In addition, this study can contribute to better understanding of the causes of pragmatic language problems in autism, and more broadly the well-attested comprehension and communication problems in that population.

Comprehension of factive and non-factive embedding as an indicator of propositional processing in aphasia

Vitor Zimmerer, Rosemary Varley, Felicity Deamer and Wolfram Hinzen

People with aphasia offer valuable insight into language and cognition. Even in cases of severe language impairment, other cognitive processes appear relatively intact (Varley, 2014). In this study we investigate aphasic comprehension of factive ([The man knows [that it is warm outside]]) and non-factive ([The man thinks [that it is warm outside]]) embedded clauses (Kiparsky & Kiparsky, 1970; Sheehan & Hinzen, 2011), which are considered an indicator not only of linguistic capacity, but also of the ability to process propositional complexity. In factive embedding, the content of both the embedded clause and the combined clauses are presupposed to be true. In non-factive embedding, the embedded clause has no independent truth value. While processing of these constructions has been extensively researched in children, we present the first such study investigating aphasia.

We recruited 20 people with aphasia and 30 older controls. Both groups were profiled using a range of standardized tests of verbal and non-verbal capacity. We designed a sentence-picture matching task to test comprehension of four constructions: (1) NP knows CP; (2) NP thinks CP; (3) It is clear to NP CP; (4) It only seems to NP CP. We compared performance between groups and looked for correlates with other verbal and non-verbal measures within each group.

Controls performed at ceiling on all sentence types. People with aphasia performed similarly well in factive trials (albeit with greater variance), but significantly worse in non-factive trials. Strikingly, regression models suggested that performance in factive trials was related to another measure of syntactic comprehension (TROG-2), while in non-factive trials, performance was most strongly related to non-verbal reasoning (Matrix Reasoning as part of the WASI-II).

We discuss these results in light of a dissociation between morphological and syntactic demands on one hand, and general cognitive demands on the other. However, we also consider the “Un-Cartesian Hypothesis” which suggests that propositional reasoning is linguistic in nature (Sheehan & Hinzen, 2011).

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Metaphors are primarily signs and not conceptual mappings

Jordan Zlatev, Elena Faur and Göran Sonesson

The phenomenon of metaphor seems fated to be perpetually controversial. Conceptual Metaphor Theory (CMT) (Lakoff & Johnson 1980; Grady 1997; Kövecses 2005) famously proposed that metaphors are not linguistic or other signs, in which a vehicle is used in an extended sense to qualify a given referent. Instead, metaphors were redefined as underlying conceptual mappings across “two domains ... regarded as different in kind” (Johnson 2010: 407). While this approach led to some generalizations and increased interest in the phenomenon, it opened a Pandora box of questions: What counts as different conceptual domains? What is the relation between the underlying “mappings” and linguistic - or more generally semiotic - expressions? How do metaphors emerge? How can the fundamental property traditionally ascribed to metaphors, creativity, still be accounted for?

In earlier work (Zlatev 2011; Faur 2013; Sonesson 2015) we have argued for metaphors being signs rather than mappings between domains, but have not elaborated this proposal. Inspired by the Integral Linguistics of E. Coseriu (1985), here we elaborate a cognitive-semiotic theory of metaphor that distinguishes between three levels of language, and sign use more generally: (i) Universal, (ii) Conventional and (iii) Situated. The last and most specific of these is the level of dialogical, multimodal interaction, where speech, gestures and other semiotic resources are recruited in “a process of meaning construal in which new metaphorical expressions dynamically emerge, are elaborated, and are selectively activated over the course of a conversation” (Kolter et al. 2012: 221). This is where metaphors arise and are at their most creative.

The more “successful” of such metaphorical signs become repeated, and eventually socially sedimented, thereby entering the Conventional level, with expressions like "He fell into a depression". The Universal level, consisting of pan-human features related to embodiment, analogy, blending and such (Zlatev and Blomberg 2016), constrains which of the expressions from the Situated level become recruited, and which get established on the Conventional level, which is where some of the mappings postulated by CMT can be found. However, such constraints/motivations are not metaphors per se, as both novel and conventional metaphors require publically accessible signs: in language or some other semiotic resource.

We offer analyses of linguistic, gestural and pictorial metaphors in terms of the proposed theory.

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Poster session

Keatsian Emotional Force-Dynamics: A Metaphorical, Metonymical and Grammatical Analysis

Katrina Brannon

The concept of “force-dynamics” (Talmy 1988) is essential to the effectiveness and functioning of conceptual metaphor. Within said doctrine, the notion of force-dynamics is often expressed by way of the “event structure metaphor,” and more specifically, the conceptual metaphor of CAUSES ARE FORCES (Lakoff 1990). This paper proposes an analysis of emotional force-dynamics in selected examples of John Keats’s poetry ('To Fanny', 'Modern Love', and 'Ode on Indolence'), based on grammatically centered analyses of the conceptual metaphors and metonymies for emotion (Lakoff & Johnson 1980, Kövecses 1990, 2000) present in Keatsian poetry.

The analytical approach concerning the emotional force-dynamics to be analyzed in this paper will be based on the effectiveness of the conceptual metaphors within the poetry, their grammatical salience, and various theories relative to emotion, such as embodiment. Keats’s conceptual emotion metaphors are often heavily focused on the relation between two entities (AGONIST and ANTAGONIST, to borrow Talmy’s [1988] terminology) or between various facets of the Self. These sorts of expressions will be clarified and analyzed by way of the theory of force-dynamics and its corresponding conceptual metaphors.

The emotion metaphors will then be examined with a particular focus on the predicates present in the examples, as conceived in cognitive grammar, so as to provide a more global and solid analysis. This talk will present the view that the grammatical structure of conceptual metaphors and is essential to their linguistic and cognitive efficacy. The cognitivist approach that grammar is “significant and symbolic” (Langacker 2008) will be employed as the foundation of the grammatical analyses in this paper, thus resulting in a deeper understanding of the internal mechanics of conceptual metaphor and its application to emotions and poetics.

The combination of conceptual metaphor theory (along with the theories providing basis for this school of thought) and cognitive grammar will provide a comprehensive outlook on the reasons for the performance of emotional conceptual metaphors in Keats’s poetry, regarding the potency of the poetry due to its poetic effects (Pilkington 2000), as well as the cognitive outcomes concerning the reader.

The Development of Writing Skills in a Foreign Language

Elena Kazakova

The aim of the present study is to examine the performance in the written production in an additional language (Russian) of 8 multilingual learners on the second and third year of learning. By doing so, it will be possible to observe the changes, possible development, and individual differences among the participants.

The participants (N=8) were Finnish-speaking university students, majoring in different subjects other than Russian. There were 6 female and 2 male participants, who studied Russian as L4 – L7 on a voluntary basis. The proficiency level on the second year was A2 and on the third A2-B2, according to self-reports.

The students were asked to write a short essay, 120-150 words, about their favorite film in Russian (a part of a larger language test). The same task was applied on the second and third years of the course module in Russian to observe changes occurred in the written production after 1 year of learning. The participants also filled in the questionnaire related to their language background.

The data were analyzed qualitatively. The essays were scored from 0 to 10. While evaluating, the following aspects were taken into account grammar, vocabulary, spelling, and length and complexity of the sentences produced.

According to the results, writing skills of the participants improved on the 3rd year. The texts became longer and number of collocations increased. However, there was one student who produced a shorter text. On a more profound level, the main achievement after one year of study was the ability to produce more compound sentences, more complex structures, and richer vocabulary. Although the number of lexical errors generally increased on the 3rd year; the incorrect lexical items were close in meanings

with the considered words; thus, not preventing from understanding. However, the number of grammar errors stayed the same level. Moreover, there were errors which did not present on the 2nd year but occurred on the 3rd year, which can be explained by the usage of more complex structures. This can also be explained by Dynamic Systems Theory, according to which new types of errors may be an outcome of a repeller stage of language development, which results in backsliding (e.g. de Bot et al, 2007). To conclude, despite the fact that the participants continued making errors and even new types of errors occurred, the students showed significant improvement on the syntactical and, to some extent, lexical levels.

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The role of so-called “frozen metaphors” as effective persuasive devices in political discourse (in France, Spain, and the US)

Liane Stroebel

„Metaphor is a solar eclipse.
It hides the object of study and at the same time reveals
some of its most salient and interesting characteristics
when viewed through the right telescope“
(Paivio 1979: 150).

Metaphors are an important tool of political discourse as they help to convey a great deal of information in a concise manner and to collapse complicated issues into more simplified packets of information, by defining patterns of perception to which people can respond (Edelmann 1971: 67). In other words, metaphors are so suitable for political discourse as they help to address symbolic themes residing in segment of the public consciousness.

For the last decades linguists focused on the persuasive function of metaphors, by trying to capture the range of associations and related frames they activate and by defining the concrete prescription for action they imply (Stone 1988: 118).

The present talk wants to tear the attention to so-called “frozen” metaphors and tackles the question: to which extent these presumably “inactive” metaphors still conduct a precise function in political discourse?

Recent findings in cognitive neuroscience and cognitive psychology suggest that mirror neurons do not only simulate observed actions (Gallese 2003, Rizzolatti 2008, Tsoory-Shamay et al. 2009), but are also activated when action or somatic lexemes are used (Rizzolatti et al. 1996, Calvo Merino 2006, Grafton 2009). Under these premises, the reiterative use of somatic lexemes in Hillary Clintons speeches (e.g. in the face of terrorism, we face the same values, every society faces a choice, now lets be clear about what we are facing, etc. or we have to stand up, to stand in solidarity, etc.) cannot be considered as a pure coincidence. By creating the image of a face-to-face with a challenge or an adversary and by insisting on the fact that we have to “stand in for sth.”, she initiates a mental simulation of the action in the brains of her listeners (Gallese & Lakoff 2005, Hauk & Pulvermüller 2004) and by doing so, the audience (willingly or not) identifies itself even more with the content of the speech as the speech is not only auditory perceived, but also mentally experienced.

Literary Translation and Generic Shifts: Irving’s Legends in the Russian Language

Natalia Tuliakova

Categorization, one of the central concepts in cognitive linguistics, is the basis for genre studies (Chandler) in literature and linguistics. Generic taxonomies are founded on a number of textual and non-textual features, cognitive properties being among the latter (Sinding). Cognitive genre analysis makes it possible to ascertain the models of particular genres, establishing its compulsory, default and optional features, and also treat the genre as a kind of schema, which reflects a certain way of literary modeling reality.

Only a few literary genres (riddle (Smolyar), pesher (Williamson), hodayot (Newsom)) have been analysed from the cognitive linguistics perspective despite the obviously productive nature of

such interpretation. It is clear that the modelling function of a genre (Bakhtin) can be accounted for by its cognitive function. In this paper, I will consider an academically neglected genre of the literary legend in its two versions – the American and the Russian one. Elsewhere (Tuliakova) I have analysed the cognitive aspect of the legendary genre, but my recent research has shown that the genre has some variations in different literatures, resulting in different functions which the genre has in the generic system.

I believe that the analysis, which should definitely lie in the field of contrastive studies, can also benefit from the context of translation studies (Achkasov), since generic norms and translation as a process and its outcome are interdependent phenomena (James).

For the present research, I analyse how Irving's legends embedded into the text of *The Alhambra* (1832) have been translated into Russian from the generic perspective. I will take into account both linguistic and extralinguistic translational shifts, which are sometimes caused by the gaps in the genre systems of the two literatures.

I suggest that in Irving's oeuvre, the cognitive function of the legend is related to the idea of disclosing some mysteries which seem appealing to the mass reader and an endeavor to establish the rational system of values. In the early Russian translations, the legends from the *Alhambra* are mostly translated separately and form books of stories. Devoid of their ironical context, the legends are perceived differently. In the early nineteenth century Russian literature, the legend fulfils a function of a half-sacred, prophetic text, related to the genre of apocrypha through its literary connections. The aim of the legend is to scare the reader and make them beware of the unknown, with the only way out presented as being humble and valuing the old set of values (as opposed to fashion and modern trends). From the linguistic perspective, it is clear that the Russian translators use the generic marker 'legend' as the element heightening the status of a text, which is revealed when generic markers are changed in the process of translation.

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Polysemy of cut and break-type Verbs in Lithuanian: its Perception and Equivalency

Vilma Zubaitienė

This report deals with the usage and polysemy of cut and break-type verbs in Lithuanian and equivalency of separate senses in the Germanic Languages. The data was collected from the Corpus of Current Lithuanian (CCL), the Corpus of Spoken Lithuanian (CSL) and the bilingual German-Lithuanian and the Lithuanian-English corpora, which are composed mainly of literary translations. In

total 500 structures with 22 different lexemes were analysed, e.g., daužyti 'to break', draskyti 'scratch', plėšti 'tear', kirpti 'to cut', laužyti 'to break', skelti 'to split', etc. These structures are classified by frequency, argument realization options and varying lexicalization patterns.

The verbs of the mentioned type are described based on studies in lexical typology and polysemy (Levin & Rappoport Hovav 2005, Bohnermeyer 2007, Majid et. al., 2008) by examining similarities and differences of the structures. The study is based on the methodology of frame semantics and grammar constructions. All lexical units of Cutting and Breaking frames are described as specific types of cutting or breaking. In different syntactic structures new senses arise, e.g., senses of cut occur in the frames Cutting, Removing, Experience bodily harm, and Cause harm (Osswald & Van Valin 2013).

Firstly, syntactic structures of cut and break-type verbs are investigated and systemic relationships in the semantic group are established. The research revealed that in prototypical situations the most common members are an agent and a patient, an instrument and a way, as well as the result of an action. An object can be damaged in two ways: some can damage the entire object, or only its surface, i.e. if the object is decomposed into parts, the verb (su)daužyti is used; as long as the surface is removed, the verbs plėšti or skusti are used; if after an attempt to effect the object some scratches remain, drėksti, draskyti are typically used. The analysis of the usage of cut and break-type verbs reveals that some verbs of the semantic group can easily replace each other (overlapping meanings) in contexts, others hardly can, i.e. laužyti priesaiką, įstatymus 'to break the oath, to break the law'. This study also aims to determine the connection of meanings of the verbs and their semantic motivation. The investigation focuses on identifying metaphorical senses in constructions with cut and break-types verbs.

Analysis revealed that cut and break-type verbs can also identify emotion (drasko širdį 'breaks one's heart', skelia galvą 'have a headache', rėžia akis 'affront the eye'), linguistic activities (skaldyti juokelius 'to joke'), eating (godžiai kirsti atneštą maistą 'bulg, engorge'), motion (skuto iš paskos 'ran behind', kirto sieną 'crossed the border').

Finally, the research of polysemous cut and break-type verbs in translation of literary texts is accomplished. The main attention is paid to recognition of these verbs when they are used in non-typical meanings, and the choice of precise English or German lexemes.

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Alexander Strukelj
Anu Vastenius
Jordan Zlatev (chair)