A usage-based approach to (instructed) second language acquisition

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Background

While cognitive-linguistics (CL) and usage-based (UB) approaches have been quite successful in showing how first languages can be learnt from the input, it is currently less clear how such learning processes can be made use of in second language (L2) learning and instruction. This session brings together leading experts in the field who present corpus linguistic, experimental, or classroom-based studies on the issue of input and intake. UB approaches assume that all language knowledge „is 'constructed' on the basis of the input" (Goldberg 2009: 93), that the major part of language learning takes thus place incidentally and implicitly during meaning-focused input processing. How can we provide learners with sufficient amounts of good, rich input and enhance their input processing strategies in light of their existing knowledge linguistic knowledge?

What amount and what kind of input do learners need to successfully (re-)construct L2 patterns? Brian MacWhinney demonstrates how item-based learning processes work in L1 and L2 acquisition, but are mediated by transfer in L2. Nick Ellis and Myrna Cintrón-Valentín look at similar issues from the perspective of attentional (re-)tuning. This debate addresses the strength and the problems of existing L1 knowledge. Related L1 structures can provide L2 learners with a head start. But strongly entrenched first language processing routines can inhibit the processing of L2 cues such that input may fail to become intake even for highly frequent constructions (Ellis 2008). How do we identify and instrumentalize the positive effects of transfer, and find ways to direct learner's selective attention in the classroom?

A second set of studies addresses the relationship between quantity and quality of input: It may be that the input to which adult L2 learners are exposed to (in classrooms or in the wild) is fundamentally different – in both quantity and quality – from the L1 input which is typically available to young children. Comparing adult L1 and L2 speakers' knowledge of English vocabulary, collocations, and grammar as well as their non-verbal abilities, Ewa Dabrowska shows that *age effects* should be reconsidered in terms of types of language experience and amount of exposure. Lourdes Ortega and Mariko Uno examine the input question via corpus-derived comparisons of representative exposure conditions for English simple past *-ed* in ambiance input to late-starting L2 users versus in parental input to (a) bilingual children and (b) monolingual children. Marjolijn Verspoor presents data from classroom studies that show that learners profit from imitation and repetition, which allows them to abstract the correct constructions, as compared to methods that stimulate production, where students may entrench non-target patterns.

Contributors

Dabrowska, Ewa. Northumbria University. *Age effects reconsidered: Comparing native and non-native speakers' knowledge of grammar, vocabulary and collocations*

Ellis, Nick C. & Cintrón-Valentín, Myrna C. University of Michigan. *Learned attention and transfer in SLA*

MacWhinney, Brian. Carnegie Mellon University. *Item-based pattern learning: Does it work the same for L1 and L2*

Ortega, Lourdes & Uno, Mariko. Georgetown University. *Investigating exposure and duress in late bilingualism*

Verspoor, Marjolijn. University of Groningen. *Implementing a dynamic usage based approach in the classroom*

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Age effects reconsidered: Comparing native and nonnative speakers' knowledge of grammar, vocabulary and collocations

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Background

This paper describes a study comparing the performance of native and non-native speakers of English on linguistic tasks tapping three aspects of linguistic knowledge: grammar, vocabulary, and collocations. Grammatical knowledge was assessed using a picture selection task developed by the author; it includes items testing a variety of structures, including noun phrases with postmodifying PPs, object clefts, object relatives, and quantifiers. Vocabulary knowledge was assessed using a modified version of Nation and Beglar's (2007) Vocabulary Size Test, and knowledge of collocations was assessed using the "Words that go together" test (Dąbrowska 2014). Participants were also given three non-linguistic tasks: a nonverbal IQ test (Shipley's Block Design, Shipley et al. 2009), a language aptitude test (the Language Analysis test from the Pimsleur Language Aptitude Battery, Pimsleur et al. 2004), and a task assessing print exposure (Author Recognition Test, Acheson et al. 2008).

The participants were 40 adult L2 learners of English from a variety of linguistic backgrounds and a control group of 80 adult native speakers whose educational and SES backgrounds approximate the demographics of UK population. The non-native speakers were all relatively late learners (mean age of first exposure: 16, range: 10-30; mean age of arrival in the UK: 24, range: 14-33). All used English at work/study at least 30% of the time; the majority also used it in private life at least 30% of the time.

As expected, the native speakers performed better than the non-natives on all three language tasks. However, for the grammar task, the difference was quite small and not statistically significant. In contrast, there were large group differences on the vocabulary and especially on the collocations task. These results are inconsistent with theories that assume a critical period for grammar, but can be explained by appealing to the amount and type of language experience that the speakers had, and hence support usage-based theories. Performance on the collocation task depends primarily on the amount of exposure: the only way to learn that one *inflicts punishment* (rather than *applying, delivering, performing* or *providing* it) is by encountering this particular combination of words in text. This is confirmed by the fact test scores are correlated with age for native speakers, length of residence in the UK for non-native speakers and reading in English in both groups. Since native speakers have had considerably more experience with English than the L2 learners, it in not surprising that they perform much better on the collocations test. To a large extent, this is also true of vocabulary, although other factors – in particular, transfer from the L1 in the case of the L2 learners – also play a role. Knowledge of basic grammatical constructions, on the other hand, is more systematic, and hence can be acquired relatively quickly given the right input. Thus, the L2 speakers' relatively good performance on the grammar task can be attributed to the fact that they had received explicit training in grammar.

The second major finding was that native and non-native speakers showed a similar pattern of relationships between the linguistic and nonlinguistic tasks. In both groups, performance on the grammar test was most strongly associated with language aptitude and nonverbal IQ, while vocabulary and collocations depended mostly on print exposure and, to a lesser degree, on language aptitude. This suggests that L1 and L2 learning rely on similar mental mechanisms, and raises a number of new questions about the nature of these mechanisms.

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Learned attention and transfer in SLA

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Background

Associative learning theory documents a range of effects of transfer and inhibition that shift learners' attention to input as a result of prior experience. One is *blocking* whereby associating a particular stimulus A with a particular outcome X makes it more difficult to learn that cue B (subsequently paired with the same outcome) is also a good predictor. There are many situations in SLA where lexical and morphological constructions redundantly cue the same outcome and where blocking is expected to apply. This paper will review a range of studies which investigate blocking in SLA as a function of L1 experience and of L2 instructional regime. Recent studies show the mechanisms by which Focus on Form methods can retune attention to otherwise blocked cues.

Ellis & Sagarra (2011) demonstrated short- and long-term learned attention in the acquisition of temporal reference in Latin. In Experiment 1, salient adverbs were better learned than less salient verb inflections, early experience of adverbial cues blocked the acquisition of verbal morphology, and contrariwise, but to a lesser degree, early experience of tense reduced later learning of adverbs. Experiment 2 demonstrated long-term transfer: Native speakers of Chinese (no tense morphology) were less able than native speakers of Spanish or Russian (rich morphology) to acquire inflectional cues from the same language experience where adverbial and verbal cues were equally available. Learned attention to tense morphology in Latin was continuous rather than discrete, ordered with regard first language: Chinese < English < Russian < Spanish. A meta-analysis of the combined results of Ellis & Sagarra (2010) and here separates out positive and negative learned attention effects: the average effect size for entrenchment was large (+1.23), that for blocking was moderate (-0.52).

Our more recent research uses eye-tracking to investigate the attentional processes whereby different types of Focus on Form (FonF) instruction overcome learned attention and blocking effects in learners' online processing of L2 input. English native speakers viewed Latin utterances combining lexical and morphological cues to temporality under control conditions (CC) and three types of explicit FonF: verb grammar instruction (VG), verb salience with textual enhancement (VS), and verb pretraining (VP). Chinese native speakers were also tested on CC and VG conditions. All groups participated in three phases: exposure, comprehension test, and production test. VG participants viewed a short lesson on Latin tense morphology prior to exposure. VS participants saw the verb inflections highlighted in bold and red during exposure. VP participants had an additional introductory phase where they were presented with solitary verb forms and trained on their English translations. Instructed participants showed greater sensitivity to morphological cues in comprehension and production. Eye-tracking revealed how FonF affects learners' attention during online processing and thus modulates long-term blocking of verb morphology.

Item-based pattern learning: Does it work the same for L1 and L2?

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Background

There is extensive evidence that much of first language (L1) syntactic learning relies on the use of item-based patterns (MacWhinney, 1975; Tomasello, 1992). However, we know much less about the role of item-based learning for second language (L2) acquisition. Indeed, the idea that L1 and L2 learning are fundamentally different (Bley-Vroman, 2009) might suggest that item-based learning would play a minimal role in L2 learning. This paper suggests that such an analysis is incorrect.

We can define an item-based pattern (IBP) in terms of these four structures:
1. the lexical identity of its predicate, which can be either a free or bound morpheme,
2. the possible lexical features of one or more arguments,
3. the position of the predicate vis a vis its arguments, and
4. the conceptual/grammatical relation that holds between the predicate and each argument.

For example, children learn an IBP for the word *more* that specifies that item, the features of its argument, its position vis a vis its arguments as in *more milk*, and the fact that *more* expresses recurrence. Importantly, children extract this pattern during the learning of operators such as *more*.

Evidence for the use of IBPs in L1 learning derives from (1) early build-ups that eliminate intervening pauses, (2) statistically significant regularities in positioning, (3) overmarking errors such as *why is the boy can't come*, (4) lexical specificity in operator word classes such as auxiliaries and interrogatives, (5) item-by-item acquisition in morphological paradigms, and (6) conservatism in learning of new lexical frames. According to inductive (Perfors, Tenenbaum, & Wonnacott, 2010) theory, item-based patterns provide the database that can give rise developmentally to feature-based patterns (FBPs). These are patterns that more closely resemble the constructions of adult grammar (Goldberg, 2006), because they operate not on specific lexical items, but rather on groups of lexical items.

When we compare the role of IBPs and FBPs in L1 and L2 learning, we find a greater reliance in L2 on FBPs, as opposed to IBPs, particularly when there is the possibility of transfer of FBPs from the learner's L1. Although there is evidence for use of some IBPs in the first stages of L2 learning (Eskildsen, 2012), it is clear that L2 learners are quick to try to organize L2 forms in accord with L1 FBP constructions. For example, English learners of French attempt to place the adverb before the verb, although French places it consistently after the verb. However, when L2 learners correct this error, they do so adverb by adverb across. Similarly, English learners of French or Spanish will at first place the adjective before the noun as in the English FBP. They then correct this to the French or Spanish postnominal position. However, they still must learn, on an item by item basis, that certain highly frequent adjectives come before the noun. Although L1 and L2 learners end up in the same state in both of these cases, and although both rely on a combination of IBP and FBP learning to organize their systems, the route that L2 learners follow is different from that of L1 learners because of the impact of transfer (Pienemann & Keßler, 2011).

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Investigating Exposure and Duress in Late Bilingualism

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Background

A strong consensus is emerging across diverse theoretical traditions that the linguistic environment plays a paramount role in shaping the rates, course, and outcomes of bilingual development, both when it is early timed (e.g., Grüter & Paradis, 2014) and when it begins later in life (e.g., Muñoz, 2014). Traditionally, bilinguals are assumed to acquire their languages under "reduced" exposure conditions. For children, however, De Houwer (2014) has recently argued that the parental input to bilinguals is quantitatively no different from (and as variable as) the input available to monolinguals – provided exposure is measured in absolute frequencies rather than self-reported proportion of input in each language, as is usually done. For adults, on the other hand, Ortega (2014) has argued adult second language acquisition can be expected to be characterized by conditions of extreme reduced exposure, or what she calls linguistic duress. The impact of this linguistic duress, in turn, must be empirically accounted for when explaining the differential levels of linguistic attainment typically observed for difficult form-function mappings among adult acquirers.

To what extent can reduced input be claimed to be a characteristic of adult second language acquisition, or of bilingual exposure conditions more generally, when compared to the exposure levels typically available to monolingually developing children?

We addressed this question by investigating the exposure conditions for English simple past *–ed* afforded to learners sampled from 3 longitudinal corpora in CHILDES (MacWhinney, 2000): the ESF adult SLA corpus; the bilingual FerFuLice corpus; and the monolingual Brown corpus. We analyzed all interlocutor/parental utterances referring to simple past tense events for features which are thought to potentially modulate the piece-meal (re-)construction of the form-function mappings of simple past *–ed*. They are: (1) the distribution of past and non-past predicates and regular and irregular simple past forms, (2) type and token frequencies and input skewness, (3) degree of phonological perceptual salience, and (4) prototypicality of the semantics of verbs. In addition, we examined properties of the past-tense constructional frames in which the *–ed* verbs occurred, namely: (5) presence of lexical cues to tense, (6) syntactic complexity of the construction, and (7) degree of social contingency.

We present our key findings and discuss them by highlighting the theoretical importance of (a) fleshing out empirically what might count (or not) as "reduced" exposure, (b) investigating whether linguistic duress characterizes late bilingualism, and (c) devising effective strategies for drawing sound corpus-driven comparisons of the language usage experience of children versus adults engaged in bilingual versus monolingual acquisition.

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Implementing a dynamic usage based approach in the classroom

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Background

This paper will review several recent studies conducted at the university of Groningen that have shown the efficacy of a teaching method that is in line with a dynamic usage based view of language. The general principles of such an approach are as follows:

- If language emerges from meaningful, culturally appropriate and authentic exchanges (Ellis 2000; Langacker 2009), and if any use of any form creates traces and associations in memory, we should encourage exposure to such language.
- If language is (Langacker 2000) has form-meaning-use pairs at all linguistic levels (phonemic, morphemic, lexical, phrasal, clausal), we should focus on all these levels: the pronunciation and intonation of phrases, the use of words, formulaic expressions, conventionalized ways of saying things, and grammar and syntactic patterns. There is no primacy for syntax or grammar, so we should not build a syllabus around it nor waste too much time on it.
- If iteration is a fundamental aspect of any dynamic process, repetition and imitation may be needed before constructions (at all levels) are fully understood and become entrenched (cf. Dam Jensen & Vinther, 2003). In line with previous approaches to L2 teaching such as processing instruction (cf. Van Patten & Cadierno 2003), repetition and imitation are useful, and it may be counterproductive to have learners produce output too early as non-target forms are likely to occur, be repeated, and become entrenched.

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Cognitive Contact Linguistics

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Background

This theme session aims to demonstrate the benefits and possibilities of Cognitive Contact Linguistics (CCL), a framework that applies core concepts, theoretical insights and methodological practices of Cognitive Linguistics and Cognitive Sociolinguistics to research on contact-induced variation and change. Theoretically, turning to the concepts of Cognitive Linguistics will make the existing taxonomies and definitions of contact linguistics (Matras 2009) easier to assess in the light of general linguistic theories, and will contribute fresh insights into our understanding of contact-induced phenomena such as borrowing and codeswitching. The proposed cross-fertilization pushes both contact linguistic and Cognitive Linguistic research forward (Doğruöz & Backus 2009, Backus 2013, Zenner et al. 2014a). On the one hand, CCL provides innovative theoretical background to help interpret and explain frequently attested contact-induced linguistic phenomena, and additionally opens up a whole new range of questions. On the other hand, Cognitive Linguistics can benefit from CCL as it involves dynamic linguistic situations in which variation and change are much more intensive than in non-contact varieties. In this way, CCL addresses the monolectal fallacy that is indicative of early Cognitive Linguistic research. Presentations will approach various types of contact data from several Cognitive Linguistic perspectives. Many of the contributions will make use of the notions of entrenchment and salience, as these can increase our understanding of variation in borrowability in general and of the crucial role that is played by semantic, pragmatic and social meaning in promoting the attractiveness of particular forms from another language. As such, Cognitive Contact Linguistics makes usage-based re-formulations of old issues in historical and sociolinguistics possible (Weinreich, Labov & Herzog 1968, Croft 2000).

Contributors

Ad Backus (Tilburg University), Eline Zenner (KU Leuven). Cognitive Contact Linguistics.
Sebastian Knöpfe (University of Greifswald). Through the cognitive looking glass: Studying bilingual wordplay in public signage.
Jocelyne Daems (KU Leuven). English and French loans in Belgian Dutch and Netherlandic Dutch: an onomasiological approach.
Antje Endesfelder Quick (Max Planck Institute for Evolutionary Anthropology, University of Leipzig), Elena Lieven (MPI, University of Manchester), Malinda Carpenter (MPI) and Mike Tomasello (MPI). Explaining language development in a German-English bilingual child
Pablo Irizarri van Suchtelen & Francesca Moro (Radboud University Nijmegen). Redefining the 'structural', and the 'transfer' in 'structural transfer'. Data from Spanish and Ambon Malay in the Netherlands.
Bram Vertommen (University of Antwerp) & Caroline Gentens (KU Leuven). PCU constructions in bilingual encounters: Code-switching and effective/epistemic concepts
Dirk Noël (University of Hong Kong). Cognitive Contact Linguistics as an essential ingredient of diachronic construction grammar.
Anna Finzel (University of Potzdam). Gender concepts in British, Indian and Nigerian English. A corpus study on multimodal metaphors in films.
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Through the cognitive looking glass: studying bilingual wordplay on public signage

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Background

While bi-/multilingual practices, as manifest in oral speech, have been a central research topic since the 1960s, the interest in the use of different codes as part of written (urban) reality has only grown recently. This is mainly due to the advent of Linguistic Landscapes Studies (LLS, cf., e.g., Backhaus 1997; Gorter, ed. 2007; Shohamy et al., eds. 2010). Typically, the latter document the visibility of different languages on public signs and link this to macro-sociolinguistic considerations of socio-economic power, prestige and identity.

The present investigation, however, approaches the field of LLS from a user-oriented micro-perspective (cf. Koll-Stobbe 2015). Its specific interest lies in the processual and, with it, cognitive dimensions of information setting on commercial signs that exhibit a specific type of language mixing, namely bilingual, in this case German-English puns. Using data from the inner city of Berlin (for cross-references see Papen 2012), it will be shown that such playful coinages, which exploit the formal identity or similarity of linguistic elements across language boundaries, can best be analyzed by applying a cognitive *cum* contact linguistic framework that sees speakers as conscious agents (see Harder 2010). Indeed, because of the salient, public display of signs containing configurations of this type, it may be assumed that they have been intentionally coined by (gradual) bilingual language users who, based on the position of English as a lingua franca in present-day Germany (see Knospe 2014), are ready to do particular cognitive investments so as to achieve special communicative effects. Moreover, it is posited here that the punning mode also activates the recipients, who are invited to work out the intended meanings. For instance, witness the coinage *Appfalleimer* which can be presently spotted on public rubbish bins throughout Berlin. Interestingly, these containers, which are habitually called *Abfalleimer* in German, offer an app, the latter term being a recent English loan in German. Through its condensed form and its placement on the orange surface of these baskets, this ad hoc wording easily captures attention. On a discursive level, it uses the semi-homophony of the particle *ab-* and of the Anglicism *app* to construct the image of a service-oriented, modern waste disposal company which asks all passers-by for help in keeping the streets clean.

Looking at bilingual puns contained in the LLS data at hand, this study will address two major questions. First, it will be identified what cognitive paths speakers who are confronted with such items need to pursue to succeed in their search for meaning. Second, it will be examined whether Stefanowitsch (2002) is right in stating that the English elements in bilingual puns are generally highly entrenched so that their actual number is constrained despite the popularity of English and the existence of a larger pool of interlingual homonyms it shares with German (cf. Stefanowitsch 2002, Knospe 2014).

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English and French loans in Belgian Dutch and Netherlandic Dutch: an onomasiological approach

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Background

This paper sets out to empirically test variation in the success rates of French and English loanwords in the two main varieties of Dutch, Belgian Dutch and Netherlandic Dutch. Crucially, we adopt a usage-based onomasiological perspective, taking the concept expressed by the loanword as starting point. This allows us to overcome a number of methodological issues present in existing loanword research (such as topic specificity; Zenner & Kristiansen 2013). Specifically, we calculate the relative preference for the loanword vis-à-vis alternative lexicalisations for a given concept (Zenner et al. 2012), as is demonstrated in Table 1 for the concept OVERHEMD '(dress) shirt'.

OVERHEMD (MAN)	Neth.Dutch	%	Belg.Dutch	%
hemd	29	19	27	93
overhemd	19	12	0	0
shirt	107	69	2	7

Table 1 - Lexicalization preferences for OVERHEMD (MAN)

Our analysis zooms in on differences in success rates for English and French loanwords in both varieties of Dutch. French loans were paramount in Belgian Dutch due to a long period of French ruling, but worked in against the uniformisation of Standard Dutch. Hence, they were advised against in language planning and are as such expected to be rejected in Flanders (Geeraerts et al., 1999). In The Netherlands, no such negative attitudes toward French loanwords exist and hence higher success rates can be expected. In contrast, this historical threat on the standardization process is lacking for English loans. Additionally, English has notable prestige as *lingua franca* in business and education in both regions (Zenner et al., 2013). Hence, more similarities between Belgian and Netherlandic Dutch are expected as concerns the success rates of English loans.

In order to test this hypothesis, the profile-based method (Table 1), first introduced in cognitive-linguistic lexicology in Geeraerts (1997), is applied to two different datasets. The first is a manual collection of more than 35,000 observations of 14 clothing concepts collected in magazines (1950-2012) and shop windows (1990-2012) for both varieties. The second dataset looks at 20 traffic concepts (e.g. VRACHTWAGEN 'lorry') in large Usenet (online discussion fora) and newspaper corpora (1958-2005), which comprise over one billion words, again for both varieties.

Our results show a marked preference for the use of both English and French loanwords in substandard language. Overall, we encounter a clear decrease in the success of French loanwords (though less pronounced in Netherlandic Dutch informal language). For English loanwords, specifically the Belgian Dutch data reveal an increase.

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Explaining language development in German-English bilingual children

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Background

Intra-sentential code-mixing by bilinguals has been the subject of considerable recent research. Often the approach is to categorize and constrain these in the form of grammatical and structural principles that might underlie them (i.a. Di Sciullo et al., 1986; Meisel 1994). This of course is based on the long-standing discussion of competence and performance. However, this distinction is not very productive and thus concepts such as frequency of exposure, entrenchment and networks of form-function mappings as proposed under a usage-based approach might be helpful in explaining patterns of bilingual production (e.g. Tomasello 2003).

In the current study we wanted to investigate the language development and code-mixing of four German-English bilingual children using corpus and diary data between the ages of 1;11 and 3;11. The following concepts are taken into account: Concerning frequency of exposure we should see that language preference is reflected in MLU values; the more children speak and hear one language the higher the MLU is in that language. Concerning code-mixing this would mean that code-mixed words/phrases seem to be retrieved more easily as they are more frequent in the input and consequently more entrenched, and thus cannot be explained with gap-filling. Further, form-function mappings might play an important role; constructions that overlap in form and function across the two languages are more vulnerable to code-mixing in comparison to structures that differ.

Results showed that language preference was reflected in MLU values: the more children spoke in one language the higher the MLU was in that language. However it was the mixed utterances that had the highest MLU for all children. Further analysis of the code-mixed utterances showed that a language switch was most likely to occur between a functional and a lexical element, e.g. *Ich play soccer – I play soccer* and between structures which overlap in form and function such as NPs (*das girl – the girl*). Analyses of the mixed elements showed that there is a preference for mixing German functional elements such as determiners, pronouns, and prepositions which are very frequent in the input. Additional analyses of the construction types showed that code-mixed utterances were more complex in comparison to their monolingual utterances, i.e. children produced more sentence level constructions such as SVO, SVOO, questions, imperatives or complex/compound utterances, consequently, children produced more fragments and phrases in their monolingual utterances.

Thus, in the following study we could show that concepts of usage-based approaches are able to explain the language behavior in young bilingual language learners.

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Redefining the 'structural', and the 'transfer' in 'structural transfer' Data from Spanish and Ambon Malay in the Netherlands

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Background

In studies of diachronic language contact, findings of structural transfer are widespread and a central issue, and in experimental psycholinguistics it has been shown that cross-linguistic structural effects can occur without co-activation of other (e.g. lexical) levels of language processing. This is different when turning to the field 'in between': synchronic bilingualism in a natural setting. Clearly, structural effects occur in this setting, as well as transfer, but we argue that it is problematic to find phenomena which unmistakably indicate *structural transfer*. We investigate this problem with two case studies from our own research into heritage languages (languages acquired as L1 by bilinguals who become increasingly dominant in a majority language already in childhood). The first dataset concern datives in heritage Spanish, and the second resultatives in heritage Ambon Malay – both in the Netherlands. Although the findings may seem good candidates for transfer from the dominant language, Dutch, with a possibly pervasive, structural effect, we argue that the underlying processes can be characterized as a redistribution of already available structures, driven by lexical and conceptual properties. In other words, nothing is *transferred*, but rather equivalent procedures are activated cross-linguistically, and the effect does not take place at a purely *structural* level, but rather, is mediated at the levels of conceptualization and lemma selection. We argue that, while it has been shown that purely structural effects can be elicited experimentally, the type of effect we discuss is the most common type, and can eventually lead to outcomes labeled *structural transfer* in contact linguistics.

PCU constructions in bilingual encounters: Code-switching and effective/epistemic concepts

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Background

Intersentential code-switching (CS) refers to a switch of Matrix Language (ML) (Myers-Scotton 1993), the language which defines the grammatical frame for a particular sentence in bilingual interactions. As opposed to common belief in mainly Conversation Analytical and linguistic ethnographic studies that CS should be approached ad hoc (Auer 1998), it has been shown that in some bilingual communities intersentential CS displays a strong systematicity (Vertommen, Backus & Lahousse, in prep.). In 10 transcripts of Dutch-Turkish (Backus 1996; Eversteijn 2012) and 12 transcripts of Dutch-Moroccan Arabic (Nortier 1990; Boumans 1998) spontaneous interaction by native bilingual speakers in the Netherlands, systematicity in intersentential CS is not related to interactional contextual parameters (e.g. activity type), but to the conceptual content of individual sentences. In the data samples, dynamic concepts (e.g. (caused) motion, transfer) are preferably expressed through Turkish/Moroccan Arabic ML sentences, whereas stative concepts (i.e., attribution, inherent possession) show a significant preference for Dutch as a ML. The distinction is reminiscent of Langacker's (2009: 291) contrast between effective and epistemic relations, the former (dynamic concepts) holding at the level of perceivable reality (effective relations) and the latter (stative concepts) at the level of cognition (epistemic stance and evidentiality). The systematicity in Intersentential CS, then, is partly due to a shift in conceptualization from an epistemic to an effective relation, or vice versa.

In terms of coding, however, this distinction was problematic for the specific category of PCU constructions (Givón 2001:153ff). PCU constructions consist of a matrix predicate expressing the perception, cognition or utterance of the proposition conveyed in the complement clause. At first sight, these are often indeterminate as to whether the matrix predicate expresses (i) an effective, perceivable relation or (ii) epistemic stance (with respect to the proposition contained in the complement). In the latter scenario, it is the occurrence conceptualized in the complement which is profiled, not that of the matrix predicate itself. Consequently, it is the nature of the complement clause conceptualization which is expected to be responsible for the ML preference (either Dutch or Turkish/Moroccan Arabic) in such sentences. This leads to the following three predictions:

- A PCU construction with a matrix predicate that expresses an effective relation is expected to take Turkish/Moroccan Arabic as its ML.
- A PCU construction consisting of a matrix predicate expressing epistemic stance/evidentiality and a complement clause expressing an effective relation (dynamic concepts) is expected to have Turkish/Moroccan Arabic as the complex sentence's ML.
- A PCU construction consisting of a matrix predicate expressing epistemic stance/evidentiality and a complement clause expressing an epistemic assessment (stative concepts) is expected to have Dutch as its ML.

As such, the choice of ML for PCU constructions can be predicted from the dynamic or stative nature of the concept expressed by the entire complex sentence. The fact that the criterial concept may be contained in either the matrix or the complement is in line with earlier findings that PCU matrices functioning as a 'parenthetical' involve the reanalysis of an original nucleus-margin structure into a single nucleus (Hopper & Traugott 2003:208-209). The CS data have the additional advantage that the choice of ML makes this functionally different relation between matrix and complement explicit.

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Cognitive Contact Linguistics as an essential ingredient of diachronic construction grammar

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Background

"Diachronic construction grammar" is a field of investigation that brings together two, still relatively young, research traditions, which one could characterize as historical construction grammar and constructionist grammaticalization theory (Noël 2013). Both traditions deal with the (phylogenetic) development of "constructicons", i.e. with evolutions in the constructional resources of languages, but they have come to this research focus from different angles, the latter being the result of a constructionist turn in grammaticalization theoretical thinking, while the former has launched off from synchronic constructionist linguistics, comprising work on schematization, "diachronic constructional semasiology" (Colleman & De Clerck 2011), "constructional attrition" (Colleman & Noël 2012) as well as "constructional borrowing".

This last term was first used by Goldberg (1990) but I am using it to refer to a sub-strand of historical construction grammar which subsumes much more recent work by Mithun (2008), Noël (2008), Doğruöz & Backus (2009), Zenner (2013) and Fischer (2013). Linking up with a different research tradition, Zenner (2013) has coined the term "Cognitive Contact Linguistics" for this line of work. Indeed, as in contact linguistics, not all of the work listed here is methodologically diachronic, but to the extent that it is concerned with the evolutionary question of how certain constructions have entered a language it can be listed under the heading of diachronic construction grammar.

Much of the work in the historical construction grammar strand of diachronic construction grammar is contrastive in nature, either because, for various reasons, it compares evolutions in different constructicons, or because, as in the case of the constructional borrowing sub-strand, it looks at changes in a constructicon which are effected by another constructicon in a language contact situation. Work in constructionist grammaticalization theory is rarely contrastive, however. A recent book emanating from this tradition, Traugott and Trousdale (2013), which, since it purports to offer an "overarching view of constructional change" (p. 39), can to all intents and purposes be considered to present itself as a textbook on diachronic construction grammar, even consciously and explicitly disregards the issue of contact in language change (p. 35). Making reference to work in the constructional borrowing strand of diachronic construction grammar, I will argue in this paper that the account of "constructionalization" (the development of new constructions) proposed in this book is imperfect as a result and I will offer a corrective to it, to conclude that to draw a complete picture of the development of constructicons diachronic construction grammar cannot do without Cognitive Contact Linguistics.

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Gender Concepts in British, Indian and Nigerian English – A Corpus Study on Multimodal Metaphors in Films

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Background

With the spread of English and its establishment as an official language in many parts of the world, the notion of a global standard has been strongly challenged. Moreover, local varieties have arisen which express different cultural concepts. Three of these varieties are British English (the "mother" variety), Indian and Nigerian English, which developed in the context of colonialism in Asia and Africa.
I am currently conducting a study on multimodal metaphors in these three varieties to see what kind of differences and commonalities there are. The main focus hereby lies on differences and commonalities in cultural conceptualisations with a special emphasis on gender concepts. My approach suggests that although English is a unifying element, these three Englishes have brought forward different concepts of gender. They are expressed in conceptual metaphors (based on Conceptual Metaphor Theory, as developed by Lakoff & Johnson, 1980, and others). According to Lakoff & Johnson, metaphors control our cognition and perception of the world, but they are also deeply rooted in culture. They can therefore reveal cultural conceptualisations (e.g. of gender) of a particular society, which may not be overt in the first place.
In order to examine such conceptualisations empirically, I am currently compiling a corpus of approximately 90 films from Britain, India and Nigeria. Since I take into account the novel idea of *multimodal* conceptual metaphors, namely their expression not only in language but also in gestures, sounds and facial expressions, films are an ideal source of data, because they are full of such metaphors.
The findings on multimodal metaphors of gender could reinforce the view that non-standard varieties have the same creative capacity as standard varieties and may also reveal cultural metaphors that might be similar to, but also completely different from each other. Although the corpus compilation is a large project which has not been entirely completed, an interim quantitative and qualitative analysis of a subset of films shows that initial findings support my hypothesis that culturally related gender issues (e.g. the status of women or legal issues concerning homosexuality) are traceable in my corpus.

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Language ideology in the contemporary Italian speech community: a semantic vector space approach to the study of language attitudes in Italy

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Research question and theoretical background

Cognitive linguists are increasingly interested in understanding the conceptual framing of language ideologies, attitudes, and representations (e.g. Geeraerts et al. 2010). In this paper, we will investigate language ideology and attitudes towards regional Italian varieties by drawing on experimental data. It is a well-known fact that the diffusion of the official Italian language – basically standardized from the 14th century Florentine literary language – has been a long and complex process (De Mauro 1963), which – paradoxically – had triggered a process of *re-normativization*, leading to the emergence of so-called 'Neo-standard Italian'. Less is known, however, about the complex contact situation between the national Italian varieties and the regional or supraregional varieties. Even less is known about how the official or common Italian language has been losing legitimacy in the last decade in favour of these regional varieties. Both regional varieties and spoken language act as erosion factors on the standard Italian received from the literary tradition, promoting the creation of new regional varieties or vernaculars. By inspecting social and psychological factors like opinions and attitudes, we want to predict future changes in the prevailing language ideology in Italy. These changes will be analyzed against the backdrop of the changing conceptions of language as pertaining to different cultural models in Western society (Polzenhagen & Dirven 2008).

Data and methods

The fundamental idea is that if the Italian speakers ascribe prestige to a social or regional group, which speaks one of the regional varieties, they will accept more easily linguistic influences from those varieties in the standard language. We will report on two data sets both collected on a sample of southern Italian speakers: the first results from a verbal guise experiment and the second from a free response experiment. The former data set is analyzed with a factor analysis, the latter one by means of distributional semantic methods and principles. The combination of these datasets will provide a more fine-grained insight into the prevailing language ideology in the contemporary Italian speech community. Previous work (e.g. Heylen et al. 2012) has shown how Semantic Vector Spaces can serve as an explorative tool to investigate large data collections which wording is used to understand attitudes. In this paper we want to contribute to this trend and use Semantic Vector Spaces to identify construal patterns in linguistic attitudes towards regional Italian varieties, and in particular to reveal the semantic fields which the Italian speaker uses when conceptualizing and talking about variation in Italy. Moreover, we will also use Semantic Vector Spaces in order to supplement the relatively bare attitudinal profile obtained by the verbal guise experiment.

Results

By combining the more traditional verbal guise and the Semantic Vector Space Model we found that the Italian spoken with Milanese accent constitutes a good candidate to become the new spoken standard in contemporary Italian.

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Cognitive Discourse Analysis

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Background

To a cognitive linguist, the linguistic choices that speakers make can reveal interesting aspects about their thoughts and thought processes. The way we speak – i.e., formulate thoughts in language – highlights aspects about the way we think, such as the current focus of attention, pertinent cognitive schema, relevant level of detail, conceptual perspective, information status, and the like. Analysing these aspects in a systematic way therefore leads to intricate insights about how speakers conceptualise the world. These can go far beyond the *content* of what people say. For instance, when saying 'to your right' a speaker will almost inevitably adopt a perspective that used the addressee's intrinsic right-hand side. However, they do not say this explicitly, and they may also not be consciously aware of this particular perspective, or any alternatives to it.

Cognitive Discourse Analysis (CODA; Tenbrink, 2015) is a methodological cover term for approaches that systematically analyse the linguistic features of unconstrained language, produced by speakers in relation to cognitively complex situations. This could be the description of a perceived or remembered scene (e.g., Hölscher et al., 2011; Tenbrink et al., 2011; Tenbrink & Ragni, 2012), a think-aloud protocol or report of a problem solving process (e.g., Gralla et al., 2012; Tenbrink & Seifert, 2011; Tenbrink & Taylor, 2015), or any other situation involving freely produced language that may reveal aspects of human thought (e.g., Mast et al., 2014). In order to address the underlying thought processes and conceptual patterns, in CODA-type research naturalistic language data are collected in carefully controlled empirical studies, typically using different conditions in which participants are confronted with cognitively challenging or interesting situations. CODA draws on cognitive linguistic insights (and other linguistic resources) to highlight the significance of patterns in the collected language data, relevant to a research question in cognitive linguistics, cognitive psychology, or any other area in cognitive science.

The theme session 'Cognitive Discourse Analysis' at ICLC-13 brings together researchers who either explicitly use CODA or engage in similar language analysis, allowing for an exchange of insights and experiences in gaining access to ongoing thought processes through the lens of language. An early call led to many expressions of interest and subsequent submissions of high quality abstracts, ranging from experienced researchers in the area to newcomers interested in this application of language analysis, covering a wide range of areas in cognitive science, and attracting contributors from several continents. This led to the selection below, which promises to be a highly interdisciplinary and multi-faceted, yet topically focused theme session within a central area of applied Cognitive Linguistics. The proposed topics encompass the verbalisation of visual percepts, spatial conceptualizations and problem solving, events, emotion, learning processes, addressee-oriented talk, and more. All of these are addressed using a close analysis of naturalistic discourse data, based on insights in cognitive linguistics from a variety of perspectives. The theme session will encourage a lively exchange of methodological concerns based on the contributors' practical experience, as well as opening up the scope of research enabled by CODA type research across disciplines.
It is planned to publish an edited book or special issue of a journal on the basis of the contributions, following a rigorous selection and reviewing process.

Contributors

Lucy Barrett (Bangor University, UK): An investigation into how visual image perception shapes the understanding of an event, and the verbalization of this understanding
Claudia Cialone (The Australian National University), Thora Tenbrink (Bangor University, UK), and Hugo Spiers (UCL London, UK): Diversity of spatial concepts in architects, painters and sculptors
Charlotte Danino (University of Poitiers, France): Talking live about an ongoing event: transposing CODA to natural language corpus studies?
Katja Egorova (University of Zurich, Switzerland): Climbing, Fighting and Talking to Mountains:
What Alpine Narratives Reveal about Our Spatial Experience
Alexia Galati (University of Cyprus): Strategy selection in collaborative spatial tasks
Katie Hoemann (Northeastern University, USA): Conceptualizing emotion and social cognition: Investigating the discursive construction of emotion experience through individual vs. partnered elicited narrative
Rachel Jane Lam (National Institute of Education, Singapore): Understanding students' representations of complex processes through Cognitive Discourse Analysis
Vivien Mast (Potsdam University, Germany): Computer talk or audience design? Localization strategies in human-machine interaction
Elena Pupynina (Belgorod State University, Russia): Taking into consideration addressee's background knowledge in route explanations

Idília Santos (University of Algarve, Portugal): *Le gritche, le mégatrans et les Tombeaux du Temps*: unconventional lexical meaning construction in a French fictional narrative discourse

Gesa Schole (Tübingen University, Germany): Applying CODA to naturalistic dialogues: Tracking inferences of object orientation

Eva Soroli (Université de Lille 3, Paris, France): Spatial representations and high-level cognitive processes from a cross-linguistic perspective: evidence from discourse analysis and eye tracking

Thora Tenbrink (Bangor University, Wales, UK): Cognitive Discourse Analysis: Using insights from cognitive linguistics to analyse language use

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Visual image perception, event understanding and dyslexia

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Background

It is widely known that people with dyslexia often struggle with written word recognition (West, 1997) and, as a result, their understanding of entire texts may suffer too (Field, 2003). Comparatively, some research has found that dyslexics have fewer problems understanding and retaining pictorial information (Kluth, 2008). While words and images differ in their visual format, understanding both relies on the use of Working Memory and lower level processing, both of which dyslexics are likely to have problems with. (McLoughlin, et al. 2002; McLoughlin, et al. 1994) When lower level processing is compromised, higher level processing (such as the application of contextual information to a text or image, and making inferences of meaning) is also affected (Field, 2003). So, despite finding fewer problems with understanding images, does this mean that dyslexics' understandings may be less comprehensive that non-dyslexics'?

The purpose of this research was to explore how people with dyslexia process and understand images compared to people without dyslexia. It studied the linguistic output of participants in relation to pictorial information presented in the stimuli. 12 native English-speaking adult university students were recruited as participants, and divided into two comparable groups based on whether they did have dyslexia (experimental group) or did not (control group). Participants were given the Raven's matrices tests (1976) to examine whether their skills in observation and reasoning were of a similar standard. Each group was given a set of three photographic image stimuli that they were first asked to describe and then to explain what they thought would happen next. The hypothesis suggested that there would be differences in the linguistic data collected from each participant group, related to differences in their inferential skills. The data collected was analysed using mainly qualitative analysis in the form of Cognitive Discourse Analysis (Tenbrink, 2015).

The results found that all participants were able to display an understanding of the overall scene depicted in each image stimuli, and suggest a future event that could follow on from the scene. The main overall difference between the results of the two groups was that the experimental group provided a less stable level of information: showing possible misinterpretations of the task instructions, the highest and lowest amounts of data given by any participant, and a wider range of scores on the Raven's Matrices tests. Participants in the control group, in comparison, provided a similar amount of data and did not present noticeable problems with the task instructions; they also showed a narrower range of scores on the Raven's Matrices tests.

With regards to the linguistic data itself, the content given was so diverse within both groups and the level of description so great for this sample size, that it was possible to identify difference between the groups in relation to individual images but not to identify any clear, overarching themes. This may have been because the participant sample size was too small, or the image stimuli were not standardised enough. Nevertheless, this project could be used as a pilot study for a more detailed piece of research looking into how people with dyslexia process and understand images compared to people without dyslexia.

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Diversity of Spatial Concepts and Language in Architects, Painters and Sculptors

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The verbalisation of spatial concepts is a recognized trustworthy and good indicator of spatial cognition, with recent previous findings covering inter alia spatial complex cognitive tasks, e.g. paper folding (Taylor & Tenbrink, 2013), indoor (Hölscher et al., 2011) and outdoor navigation and wayfinding (Hölscher et al., 2006; Spiers & Maguire, 2008); cultural spatial perception diversity (Levinson, 2003). We explore here effects of professional experience on spatial conceptualisation as reflected in verbal description using cognitive discourse analysis techniques: CODA (Tenbrink, 2015). Trained architects, painters, sculptors (here defined as professionals), and a group of trained individuals from other professions (defined as controls) were asked to describe, navigate and transform a variety of complex spaces represented in pictures. Results show systematic linguistic patterns in the verbalisations according to profession, revealing diversity in the way the depicted spaces were conceptualised. Differences emerged as those spaces were: 1) analyzed in terms of their haptic materiality or more visual geometric patterns; 2) ‘navigated’ or ‘transformed’ in terms of visual as opposed to physical (somatic) involvement; 3) described in their specific parts adopting technical descriptions underlying aspects of their flat geometry or materiality or conceptually significant spatial terms such as 'back' as opposed to 'end' used alternatively mainly by professionals.

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Talking live about an ongoing event: transposing CODA to natural language corpus studies?

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Background

This paper proposes to explore the relevance of Cognitive Discourse Analysis (Tenbrink, in press) on naturally occurring, non-controlled data, which none the less feature a highly constrained speech situation and consequent verbalizations. The corpus is constituted by the first four hours of CNN's live broadcast on September 11, 2001.

We will first show that the linguistic productions in this corpus are three times constrained: by the type of situation, by the discourse format (of the breaking news set-up, after Steen and Turner 2013) and by the characteristics of the interaction (identifiable sociodiscursive profiles and modes of discourse, after [Smith 2003]). These constraints, we argue, work as control parameters of meaning construction mechanisms so that actual verbalizations can be understood as specific cognitive tasks, such as description. In order to closely examine this theoretical and methodological proposition, we gathered verbalizations of similar events: the plane crashes on that morning, and their ensuing consequences. Produced recurrently by multiple speakers in the corpus, they offer an opportunity to look at either retrospective reports, current simultaneous descriptions, or at elicited contents (Ericsson and Simon 1993 on verbal reports types). Indeed, the journalists' questions act on occasion as a control parameter on witnesses' verbalizations.

The analysis of these verbalizations reveals two elements. First, their commonalities allow for an account of salience and relevance as key constraints on language production. In showing how perceptual salience and situational relevance converge to orient, if not format, verbalizations, all contributing to an "emergent common ground" (Kecskes and Zhang 2009). In this line of ideas, and in line with Lambrecht (1996), nominal and lexical references carry differential levels of accessibility and/or activation of the referents. I will present a definition of key words interested in the occurrences of the full nominal reference word, excluding pronominal forms. Two words will support the analysis: *smoke,* which has no synonyms and *plane*, which has many, several of them used the corpus. Categorization and event construal prove to be the main factors explaining the different uses of the lexical items.

Event construal is the second focus of the CODA-based analysis. Building up on the study of information structure, I looked at the predications in which the targeted lexical items were "inserted". A contrastive analysis of the existential structures and of the verbal expression of visual perception reveal both how key words are conceptualized in the situation and what specific communicative function these structures correspond to:

(1) **you can see** the smoke billowing out there **there are** flames billowing out there / anda a commercial jet . crashing / into one of the towers
(2) as I'm sure you can see **there's** a ton of smoke coming out right now //
(3) (…) / where the darker smoke **is billowing** out right now /

Evidentiality, intersubjectivity, restriction on the reference of the NP all factor in the distribution of the structures but I will show that perception supports description while existential structures build representations. In this paper, I hope to contribute two elements as far as theoretical and methodological aspects are concerned: first, that CODA allows researchers in cognitive linguistics to tackle language production within corpus studies, outside of the lab; second, that it is, to date, the best agreement linguists and psycholinguists can have to put the efforts in common.

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Climbing, Fighting and Talking to Mountains: What Alpine Narratives Reveal about Our Spatial Experience

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Alpine literature as a literary genre of its own has a relatively long history. The non-fiction part of it, mostly represented by the accounts of the mountains' ascents, offers a rich potential for exploring the way space is imagined and constituted. The general goal of this work is to examine the spatial discourse by bringing together linguistic analysis and human geography research on the meaning of place. Specifically, we aim at gaining an insight into the way people make sense of their experience in such structurally specific space as mountains in the context of intense interaction with it.

The concept of the meaning of place reflects the idea that a particular location in space becomes place only when it acquires a set of meanings, which can be both individual as well as social and, thus, shared. Such meanings are characteristic not only of the urban environment, where the reiteration of places is conducted multiply, but of natural settings as well[1]. The numerous alpine narratives that are now available online and in the form of digitized texts provide rich data for answering a wide spectrum of research questions[2]. We set out to explore such data with the specific purpose of extracting meaning of place.

In our first step, we have conducted a pilot study of 20 narratives from the online American Alpine Club Journal[3]. The texts were of approximately the same length and made up a 16 000 words corpus; we ensured that the same author did not appear twice. The narratives describe experiences in hardly accessible mountains, where proceeding requires significant effort and skills. The goal of this explorative analysis was the identification of linguistic features that might have a certain level of salience and significance for our research. Our focus has been primarily on the expression of the sense of place.

According to our findings, alpine narratives are organised around the CLIMBING IS A BATTLE metaphorical mapping. The correspondences between these domains are systemic and widely represented in metaphorical expressions. Top of the mountain is the target to capture (e.g. "a seemingly impenetrable alpine bastion"). Alpinists and natural obstacles on their way are the fighting sides ("we fought for that 70m for eight hours", "small gullies guarded our entrance to the top"). Alpinists' weapons is alpinist gear ("and unleash the fury of his hammer"), the weapons of the mountain is the natural hazards ("large avalanche to bombard them"). By means of weather a mountain can also take prisoners ("the team was caged…like prisoners"). A successful ascent is a victory ("a hard-earned siege on the mountain"), while not reaching the top is a defeat ("our main target had been Nordenskjold (2,355m), but we were beaten back below the summit"), often resulting in another attack ("we returned to blitz the Uummannaq"). MOUNTAIN IS A PERSON is another metaphorical mapping employed in the narratives, implying conceptualization of a mountain as an agent capable of some action.

Some of the further prominent linguistic features include intensifiers (e.g. "perfectly remote", "unbelievably aesthetic", "utterly exhausted"), superlatives (e.g. "the worst rock imaginable", "the steepest of the pyramids", "the sketchiest lead"), lexemes from the semantic field of feelings ("hoping to repeat", "doubtful if the summit was attainable", "felt demoralized", "looked equally desperate").

In the next steps, we aim at an systematic operationalization of categories reflecting the meaning of place in the alpine narratives. Further, compiling corpora of texts belonging to different time periods will allow us to analyze the way discourse has been constructed, reproduced or changed over the time; also, corpora of texts describing geographically disperse mountainous areas would allow us to see discourse variation in space.

[1] Cresswell, Tim. *Place: An Introduction*. John Wiley & Sons, 2014.
[2] see, for example, http://textberg.ch
[3] http://aaj.americanalpineclub.org

Strategy Selection in Collaborative Spatial Tasks

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Background

Across two experiments, speakers described from memory table-top layouts of objects to a conversational partner who reconstructed the layouts at a separate workstation. The goal was to examine how spatial descriptions are shaped by egocentric biases (the speaker's viewpoint), social cues (the conversational partner's viewpoint), and other representational cues (e.g., the configuration's intrinsic orientation). In Experiment 1, Directors studied randomly configured layouts while either knowing or not knowing their Matcher's misaligned viewpoint (Galati et al., 2013). In Experiment 2, the layout had an a bilateral axis of symmetry; as with Experiment 1, advance knowledge of the partner's viewpoint was manipulated, as well as whether the layout's orientation was aligned with the Director, the Matcher, or neither partner (Galati & Avraamides, 2014).

In dialogue transcripts, the Directors' spatial expressions were coded in terms of their underlying perspective, focusing on the distribution of egocentric expressions (e.g., "*in front of me* is the bracelet") and partner-centered expressions (e.g., "the battery is *to your right*"), among other types. Speakers used partner-centered expressions more frequently when it was relatively easy to adopt the partner's perspective: when the Matcher's viewpoint was misaligned by a small offset (90˚) or coincided with the layout's intrinsic orientation. Conversely, they used egocentric expressions more frequently when adopting the partner's perspective was relatively difficult: when the Matcher was misaligned by an oblique offset (135˚) or when their own viewpoint coincided with the layout's intrinsic orientation. In both experiments, memory tests (judgments of relative direction and layout drawings) preceding descriptions provided triangulating evidence about the conceptual representations that supported Directors' descriptions.

Analyzing the end distributions of speakers' spatial expressions, along with metrics reflecting their (presumably stable) memory representations, captures speakers' global preference in perspective. Yet it does not capture the incremental process by which perspective strategies emerge and are negotiated in dialogue. Indeed, speakers often mix perspective strategies (Tversky, Lee, & Mainwaring, 1999) and consider the partner's feedback and progress on the task to adapt their perspective strategies (Schober, 2009). Currently, we are examining switches in the perspective of speakers' descriptions in order to clarify the extent to which these switches are long-lasting (beyond the current item), prompted by the partner (vs. self-initiated), and associated with cognitively important junctures in the task. For this, the Matcher's feedback (including proposals and clarification requests), dialogue management events (e.g., explicit appraisals on progress on the task, negotiations of perspective, and agreements on a perspective), as well as the state of the layout's reconstruction are being coded in a Cognitive Discourse Analysis approach (Tenbrink, in press). Although speakers seem to have an overarching, global preference for a spatial perspective depending on the available social and representational cues (Galati & Avraamides, 2014), clarifying how local perspective choices are contingent on interactive and task-related events affords a more nuanced understanding of coordination in spatial tasks.

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The conceptualization of emotion in monologic vs. dialogic discourse

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Background

Emotional experience is a pervasive aspect of our personal and social lives. We think and talk about our emotions in order to contextualize, and often rationalize, our affective states. Discussing emotional experience with others provides an opportunity to co-evaluate, and connect empathetically about the nature of our shared world. In apprehending the emotional states of others, we engage in the process of identification, or simulated experience, based on a theory of mind as well as inferences drawn from personal and collective experiential knowledge.

The present paper investigates the conceptualization of emotional experience as manifested through discourse. Emotion, like, language, is based on a rich network of conceptual structures and cognitive processes, and situated in the context of overarching socio-cultural practices. In this study, I explore the extent to which the construal of emotional experience is influenced by forms of social cognition, and how these conceptual differences are reflected by changes in the perspectives speakers adopt.

Drawing from the methodological framework of Cognitive Discourse Analysis (CODA: Tenbrink, 2014), I base my work on the premise that the mental representations and thought processes invoked in the interpretation of emotional experience, though not directly accessible, can be inferred from the language used to verbalize them. Having defined a set of theoretically-relevant linguistic features for analysis, I use an experimental approach to elicit narrative data. Participants were randomly assigned to either a monologue or dialogue condition and were asked to describe the emotional experiences of a character in a short film.

Transcribed and coded for the given conceptual measures, the case data showed that partnered interactions tended to use both a greater number and a wider variety of terms describing emotional qualities or states. Likewise, speakers within dialogues made more frequent use of a first-person point of view, whether explicitly marked by pronouns or verb morphology, or implicitly communicated via affective evaluations of the film. Solo speakers showed heavier use of specific evidence in substantiating their descriptions, but were also more likely to use markers of categorical gradation (e.g. ‘sort of’), perhaps indicating conceptual hesitancy. Taken together, these results identify several aspects of the representation of emotional experience that are influenced by interactive discourse, laying a foundation for further linguistic research on the social construction of emotion.

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Understanding Students' Representations of Complex Processes Through Cognitive Discourse Analysis

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Background

In the orientation of language symbolizing human thought (Chomsky, 2002), I used Cognitive Discourse Analysis (CODA) to examine students' representations of concepts in chemistry in an educational setting. CODA was chosen because it provides a systematic methodology for assessing verbal language as "unconstrained language elicited in purposefully controlled situations" in order to illustrate how people represent concepts (Tenbrink, 2015). The existing research using CODA has typically analyzed verbal protocols from single persons collected through techniques like "think aloud." My work differs by using CODA for student-student dialogues. The dialogues were transcribed from video-recordings of students that engaged in a learning activity called *collaboratively observing tutorial dialogues* (Chi, Roy, & Hausmann, 2008). The students' goal was to learn about the concept of molecular diffusion and in particular, the emergent and complex nature of its process. Chi, Roscoe, Slotta, Roy, and Chase (2012) showed that students rarely use an emergent/complex systems representation to understand emergent phenomena, resulting in robust misconceptions.

This work expands upon prior research showing that learning gains are positively correlated with students' content-related utterances in dialogues (Muldner, Lam, & Chi, 2014), and that students' who carry an "emergent schema" to represent the concept of diffusion produce better learning outcomes (Chi et al., 2012). While Chi et al. (2012) took the approach of manipulating the learning environment to activate an "emergent schema," my work differs by analyzing students' conversations to detect the utilization of an emergent representation in discussion.

The figure below illustrates how I analyzed the dialogues for emergent representations using CODA. The protocols were first segmented into "substantive" utterances at the phrase level using the following definition of a "substantive segment" from Chi et al. (2008), "…a meaningful contribution to an ongoing activity, such as problem solving, or a relevant response to a tutor's [speaker's] explanations" (p. 325). After segmentation, a set of emergent characteristics was used to determine whether an utterance represented an emergent perspective or not (see Chi et al., 2012). A unit was coded as Emergent (E), Non-Emergent (NE), Non-Substantive (NS), or Meta-Cognitive (MC). E units (implicitly or explicitly) represented an emergent perspective relative to the diffusion content, NE units were content-specific but not emergent, NS units did not correspond to content but referred other talk (i.e. task coordination), and MC units were meta-statements of understanding.

An excerpt of two students discussing the concept of blue dye diffusing through a container of water is presented below using a line-by-line annotation via the CODA method.

Student ID	Informational Unit	E	NE	NS	MC
2011	It's [*the area of dye*] gonna go right here [*points at worksheet*]	0	1	0	0
	it's small and then the container's gonna fill up	1	0	0	0
2013	Yeah.	0	1	0	0
2011	Ok, so we'll move on to the next one? [*reads text question*]	0	0	1	0
	I'm thinking for 1 second, the molecules will be tightly packed	0	1	0	0
	15 seconds, they'll be moving faster	0	1	0	0
	and spread out	1	0	0	0
	and 5 minutes the molecules have...the glass will have reached equilibrium?	0	1	0	0
	I don't know ... I don't know how to explain that.	0	0	0	1
2013	Dynamic equilibrium, right?	1	0	0	0

Figure 1: Annotation of student utterances using CODA

This excerpt was taken from a pair of students who produced the top individual test scores post-task (determined by gain from pre- to posttest). In comparison with the lowest performing pair, their discussion included many more emergent utterances. The ratio of E:other units was in the range of 1:3 compared to 1:20 for the low-scoring pair. In future work, I will use CODA on the dialogues of all pairs in the sample to determine how different types of emergent and non-emergent utterances relate to learning outcomes. Through this work, I hope to show how a cognitive linguistics orientation can help to evaluate instructional methods that involve peer discussion. Bridging the disciplines of cognitive linguistics and learning environments in this way may contribute towards improving practice in education.

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Computer talk or adaptation? Localization strategies in human-machine interaction

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Background

A number of studies show that in human-machine interactions (HMI) people use conceptually and syntactically simpler language than when talking to humans (e.g., Amalberti, Carbonell, & Falzon, 1993; Moratz, Fischer, & Tenbrink, 2001). In particular, Zoeppritz (1985) claims that "computer talk" is a separate register, distinct from language used in human-human interaction (HHI). On the other hand, humans adapt to the needs of their interlocutor (Clark & Bangerter, 2004). Thus, the question arises whether "computer talk" really has a special status, or whether it is merely a product of the same mechanisms that guide audience design in HHI. Relatedly, the question arises whether the heuristics guiding humans' choice of simplified language can be overruled by situational factors that encourage the perception of an artificial agent as a competent communicator, as suggested for example by Fischer (2007). In the face of dramatic improvements of natural language processing technology, it is time for a new assessment of the "computer talk" hypothesis.

In a Wizard of Oz / Confederate study by Mast & Bergmann (2013), humans were told to communicate with either a system (wizard condition) or an expert (confederate condition) in a localization task in a complex building, in a setting which encouraged the perception of the system as a competent communicator. In this experiment, participants answered the initial question "where are you?" posed by the system/expert, and then answered follow-up questions until supposed success or failure of the localization.

Mast & Bergmann (2013) show that the syntactic complexity of object descriptions in HMI is similar to that of human-human interaction. Building on this work, I performed an analysis of conceptual strategies for localization used by the participants in 5 consecutive dialogues. When answering the initial localization question, participants either describe a (real or hypothetical) navigation from a prior position or building entrance to their current position, or they provide hierarchical position information such as floor or department, or they describe objects which are visible in their surroundings.

Preliminary analysis shows that initial choice of localization strategies does not differ substantially between HHI and HMI with participants in both conditions using all three strategies. Moreover, in both conditions adaptation takes place over the consecutive dialogues, leading to an increase in the description of visible objects as a consequence of system/expert questions being targeted exclusively towards this kind of information. These preliminary findings suggest that "computer talk" is not fundamentally different from other forms of audience design in the investigated respects, and that humans' behaviour towards machines can be formed by the way a communicative situation is framed.

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Taking into consideration addressee's background knowledge in route explanations

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Background

Many aspects of giving and asking for directions have been studied in terms of both their production and comprehension from different perspectives (CODA: Tenbrink, T. (in press); Tenbrink, T., Bergmann, E., and Konieczny, L. (2011); and others). However, the fact that directions discourse is not unilateral has not received much attention.

Our research focuses on the directions discourse producer's part where he/she is seen not only as a route instructions giver but as an interlocutor who is able to take into consideration the addressee's cognitive status, namely his/her background knowledge due to which the addressee is able to comprehend route instructions and to perform activities of finding the way.

In this regard, our research is aimed at answering two questions: How does account of the addressee's background knowledge influence route explanation strategy? Does it have an effect on route explanation comprehension? These questions predetermined two stages of our research.

To answer the first question, a corpus of route explanations taken from forums and personal sites was studied. Despite their written form, the Internet communication texts share many features with spoken language. In these texts nonverbal means facilitating expression of spatial information in face-to-face communication are compensated by richer verbal content, which makes them good for research into spatial cognition through language. The texts selected for our research are route explanations for journeys on foot to places in the vicinities of Moscow for hikers and novice climbers.

Route explanations were analyzed in terms of two components of communication: interaction and information ones. Both were identified through linguistic markers. Information component revealed spatial and other types of information. Linguistic markers of spatial information were categorized into instructive and descriptive. Along with the qualitative analysis, quantitative study established proportion of the markers in each description.

The results show that there is direct correlation between interaction and information components of the discourse. The more interactive the discourse is, the more types of information it contains. Besides, spatial information is more descriptive than instructive, it concentrates more on landmarks reference and their detailed description.

Presence of the interaction component proves the discourse producer's sensitiveness to the information needs of the addressee. More sensitive discourse producer also prefers descriptive strategy to instructive one seeing it as a more adequate way for the addressee to form spatial representation of the environment in which he/she will have to find the way.

The second stage of the research involved people rating route descriptions under consideration according to the difficulty of their comprehension. The participants are from Belgorod, which means they have no background knowledge of the vicinities of Moscow. According to the data received descriptive discourse with interaction component is rated as more comprehensible.

Our research shows that account of the addressee's background knowledge influences route explanation strategy and is one of the factors responsible for directions discourse success.

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Le gritche, le mégatrans et les Tombeaux du Temps: strategies for constructing meaning for unconventional lexical units

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Background

New meanings are usually described in Cognitive Semantics with the focus on the polysemy of already lexicalized units and on the meaning variation they acquire in different contexts. Research in Cognitive Psychology about how readers learn new words from context tends to focus on the basic vocabulary learned by children in face-to-face interactions. Less attention has been given to how adults, in a naturalistic reading task and in the absence of an explicit definition, construct lexical representations for new words which refer to entities that cannot be directly observed (Dąbrowska, 2009).

French lexicology research (Sablayrolles, 2013) on neology suggests that a set of specific word creation processes (*matrice lexicogenique*) and the neologism's mapping to lexicalized items are used in the interpretation of new words. The cognitive approach to morphology (Tuggy, 2005) assumes that language constructions (Goldberg, 2006) at different degrees of schematicity are used to generate and process new lexical items. At discourse level, it is generally agreed that the production of inferences about new lexical items is made on the basis of real-world knowledge and genre knowledge (Stockwell, 2000; Bréan 2014) aiming at the formation of a discourse model.

This paper presents a qualitative empirical study on the cognitive strategies used by readers to construct meaning for new lexical items in naturalistic discourse. By applying the Cognitive Discourse Analysis methodology (Tenbrink, 2015) to reading tasks and presenting the group and procedures, I will investigate how a group of 17 participants, when reading the first 3 pages of a science fiction narrative in French, construct meaning for nonce formations, i. e. lexical items created to refer to fictional entities, commonly said to function as discourse markers and to be meaningless or presenting a high degree of opacity (Munat, 2007).

Results show i) the quantitative relevance of categorization processes (i.e. systematic paradigmatic repetition; systematic use of shell words as markers of degrees of schematicity; functional information as category marker) for first occurrences of a lexical item; ii) the use of force dynamics constructional meaning for lexical items referring to types of spatial entities; iii) communalities of meaning construction processes between single word items in *N de N* constructions and complex *N de N* lexical items; and finally iv) individual differences in the use of genre knowledge and the progressive use of text knowledge and entrenchment of nonce formations throw reading.

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Applying CODA to Naturalistic Dialogues: Tracking Inferences of Object Orientation

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Background

Cognitive Discourse Analysis (CODA) is a method to investigate how situations are cognitively perceived by interlocutors (Tenbrink 2015). The method aims at identifying systematic linguistic patterns in unconstrained language that is collected relative to cognitively complex situations. The present study deals with the question to what extent and under what circumstances speakers expect the addressee to draw inferences about object orientation.

When referring to an object and its parts, speakers frequently point to its axes. Analogous to the human body, Landau and Jackendoff (1993) differentiate between three (directed) axes: top-bottom, front-back, and left-right. It depends on the object's features and the way people use it in everyday situations whether and how axes can be projected onto the object (e.g. Ehrich 1985). To be unambiguous about an object's orientation, the speaker must refer to at least one of its (directed) axes and indicate a direction where it points. This direction parameter may be filled by another entity in the surrounding, or a projective term (*left, right, in front, behind*), interpreted from a speaker- or addressee-centred perspective. According to Levinson (2000), simple descriptions of a situation indicate that the situation in focus behaves stereotypically, so that quite rich interpretations may be licensed upon minimal information given. This implicates that interlocutors do not necessarily need to specify object orientation when the object in focus is in a stereotypical orientation (i.e. back axis pointing to a wall).

In a referential communication task (first reported in Tenbrink et al. (2008)), a director described a furnished dolls' house, and a matcher had to furnish another, empty dolls' house accordingly. The study comprised a stereotypical and an atypical spatial array. The language data were annotated for references to the objects' axes and an indicated orientation direction. The main difference between the two spatial arrays concerns giving complete vs. no information about object orientation (see Table 1). Dialogue partners exchanged complete orientation information more often in the atypical array, and gave no information about object orientation more often in the stereotypical array. The results show that whenever interlocutors are confronted with a typical spatial situation, they rely on inferences drawn by the addressee more often than being explicit about the spatial layout. When they perceive a situation as atypical, however, they tend to be clear about spatial relations.

For the present study, CODA appears to be an adequate method to investigate how people perceive the typicality of different situations and how they adjust spatial descriptions to the dialogue context.

Table 1. Success and failure of object orientation relative to informational extent

	stereotypical spatial array		*atypical spatial array*	
informational extent	success	failure	success	failure
complete	18.6%	1.3%	39.8%	1.3%
incomplete	30.9%	1.9%	36.1%	1.9%
missing	44.7%	2.7%	19.1%	1.9%

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Spatial representations and high-level cognitive processes from a cross-linguistic perspective: evidence from discourse analysis and eye tracking

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Languages differ strikingly in the means they provide for the lexicalization of spatial information, thereby constraining how speakers organize spatial information to encode motion in discourse [1]. In so-called *satellite-framed* languages such as English, motion events are typically expressed with MANNER verbs together with PATH adjuncts, whereas in *verb-framed* languages, such as French, PATH is typically lexicalized in verbs leaving MANNER implicit or in the periphery of the sentence. Such cross-linguistic differences raise new questions concerning the relation between spatial language and thought. Does variation in language use reveal anything about the ways in which speakers conceptualize crucial aspects of a spatial event? Instead of taking for granted that all thinking is conditioned by the structure of the language in which we formulate our thoughts [2], or that thought patterns determine our language patterns [3], the present paper aims to go beyond this debate and investigate more importantly the extent to which these two aspects are complementing or interacting [4] by examining speakers' mental representations and high-level cognitive processes related to scene perception and event conceptualization.

In this context we examined how speakers of two typologically different languages, English and French, performed several controlled tasks involving motion events: a production task (where participants were allowed to make their own linguistic choices and describe visual scenes showing motion events), a non-verbal categorization task (where participants had to group together visual stimuli of these events) and a verbal categorization task (where they had to decide which visual stimulus best fitted a sentence describing a motion event), all coupled with an eye-tracking paradigm for further insights on on-line cognitive processing.

The verbalizations[4] during the production task differed substantially in the two language groups as a function of language-specific/typological factors. As expected, French speakers focused mostly on PATH information (lexicalized in the verb), while English speakers expressed MANNER (in the verb) and PATH (outside of the verb) equally often, thereby producing denser utterances. Subjects' preferential choices during the categorization tasks (in both of its verbal and non-verbal versions) were guided by different criteria. However, a more important language effect was observed in the verbal version of this task as compared to the non-verbal one. Finally, although speakers in both groups allocated more attention to PATH information overall during the visual exploration of the events, their focus patterns of attention also varied across groups, suggesting a greater focus on PATH in French as compared to English, as well as a different unfolding of attention during the processing of the visual stimuli.

In conclusion, we argue that speakers are influenced by the patterns of their language when describing and categorizing motion events, however to a lesser extent when the task doesn't involve explicitly language. In addition, variation in the attention allocation patterns suggests that visual behaviour is based on both parallel universal (physiological) and language-specific constraints, thus

[4] The verbal data were transcribed in .cha format using CLAN software http://childes.psy.cmu.edu/clan/ and then coded according to [5] principles (systematic annotations for spatio-temporal components in discourse).

supporting a moderate view that allows for dynamic mutual interaction between discourse and cognitive factors.

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Cognitive Discourse Analysis:
Using insights from cognitive linguistics to analyse language use

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Background

Cognitive Discourse Analysis (CODA; Tenbrink, 2015) is a method that uses insights from Cognitive Linguistics and beyond to analyse verbal data collected in relation to cognitively challenging tasks. When asked to verbalise their thoughts, speakers draw in systematic ways from their general repertory of language to express their current concepts. Their choices in relation to a cognitively demanding situation can reveal crucial aspects of their underlying conceptualisations, shedding light on how people *solve* complex problem solving tasks, as well as how they *describe* complex problems or scenes. For instance, in a route description context, the utterance 'Turn right at the shopping mall' shows that the speaker has a concept of a unique shopping mall that distinguishes it from other buildings in the environment, and can therefore be referred to by a definite article and used as a landmark to anchor a direction change. The formulation 'turn right' also reveals the underlying perspective (egocentric as perceived by the traveller, rather than compass based). In these and other ways, linguistic choices can reflect crucial aspects about the speakers' conceptualisations. This provides a useful pathway to access cognition, drawing on knowledge about relevant features of language supported by cognitive semantics (e.g., Talmy, 2000), cognitive grammar (Langacker, 1986), functional grammar (Halliday, 1994), and other linguistic findings.

In this talk I will briefly present the main ideas of this methodology and illustrate it using examples from recent and ongoing projects, with a focus on how insights from cognitive linguistics support the interpretation of speakers' linguistic choices in relation to how they think about a situation or problem. For instance, following Talmy (2000), an unmarked description of a scene involving a bike and a house would be 'The bike is next to the house'. This is because the bike is movable and relatively small, while the house is a good candidate for establishing a stable location description. Therefore, a description like 'The house is next to the bike' signals a fundamentally different attention focus (Talmy, 2007), which most likely can be traced back to features of the discourse or task situation. While speakers are not necessarily aware of the alternative options at their disposal (Halliday, 1994; Tenbrink & Freksa, 2009), predictions along these lines can be tested empirically, yielding patterns of language use that can be systematically related to the thoughts triggered by a situation. Tenbrink & Ragni (2012) used this approach to show the underlying principles of language use when confronted with simple spatial scenes, such as following representational principles of attentional distribution (Talmy, 2007), and presupposing that terms like *left* and *right* always refer to a direct (undisrupted) relationship between two items (Talmy, 2000). These implicit principles need to be taken into account when using language as a medium to address cognitive processes (e.g., Knauff & Johnson-Laird, 2002), which is often done across disciplines in cognitive science.

Furthermore, the patterns of linguistic choices may be related to the speakers' background. Cialone, Spiers, & Tenbrink (2013) found that different professionals naturally described the same spatial regions within the visual field in distinct ways. In particular, architects tended to describe the region as ‘end’ related to a dynamic path, whereas painters used the term ‘back’, which is related to a more static distinction of background and foreground (Talmy, 2000). Findings such as these are highly relevant for understanding the relationship between language and thought.

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Cognitive-functional approaches to adjectives

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Background

Over the last few decades, linguistics has witnessed a shift from the so-called "the dictionary-and-grammar model" (Taylor 2012: 8) to a view where knowledge of language is assumed to be knowledge of constructions, defined as form-meaning pairings (Croft 2001). The fundamental theoretical assumptions cherished in constructionist approaches – including the syntax-lexicon continuum hypothesis (Goldberg 2006) – have allowed researchers to explore a wide range of topics (e.g. idioms, argument structure constructions, constructional morphology, pragmatic properties of constructions, language change and variation). Despite the diversity in the topics dealt with by construction grammarians and, more broadly, cognitive linguists, the majority of research still has had a tendency to focus on verbs and related issues such as tense, aspect, modality, voice and/or sentence structures. (An important exception includes Croft's (2001) approach to parts of speech, where the terms noun, verb, and adjective are described in terms of functional prototypes.) In this workshop, we pay special attention to the relatively untouched domain of adjectives. Due to their secondary nature (with respect to their lexical, semantic, and grammatical aspects), adjectives have not been on many construction grammarians' and cognitive linguists' radar. This relative neglect does not only apply to construction grammar and cognitive linguistics, but also to other domains of linguistics including sign linguistics (Schwager & Zeshan 2008) and neurolinguistics (Meltzer-Asscher & Thompson 2014). The main interests of this session lie in issues associated with meaning and grammar. The scope of the session, however, is far-reaching, because the contributors explore adjectives from a wide range of dimensions by discussing a variety of topics. Shibuya investigates how English adjectives in the attributive and predicative constructions changed their lexical and constructional richness diachronically (between the 1960s and the 1990s). Jensen explores the [*X enough to* VERB]-construction from the perspective of usage-based construction grammar, addressing its interaction with adjectives, adverbs, and nouns. Hummel addresses how the adjective-adverb interface in Romance and English can be studied by using theoretical concepts of cognitive linguistics. Korecky-Kröll & Dressler investigate the acquisition of adjectives. More specifically, they explore how children from high and low socio-economic status SES families acquire adjectives. Carlson, drawing on a Cognitive Grammar (Langacker 2008) claim on the non-essential character of constituency in syntax, shows how adjectival secondary predicates in Supyire (Gur, Niger-Congo) must be distinguished from attributive adjectives on other grounds than constituency.

Contributors

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Kim Ebensgaard Jensen. Aalborg University. Adjectives and usage-patterns in the [*X enough to* VERB]-construction
Martin Hummel. Karl-Franzens-Universität Graz. Underspecification and inference at the adjective-adverb interface in Romance and English
Katharina Korecky-Kröll, Wolfgang U. Dressler. University of Vienna. Adjective acquisition in children from high and low SES families: evidence from spontaneous speech and structured elicitation
Robert Carlson. Africa International University. Non-essential non-constituency: adjectival secondary predicates in Supyire

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Lexical and constructional richness of adjectives: a diachronic study

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Background

Language change represents variation over time. It can be found at any level of language, including phonology, morphology, semantics and syntax. From the perspective of construction grammar, knowledge of language is knowledge of constructions, and from the perspective of usage-based language change modeling, the constructions (or the speaker's knowledge of grammar) are characterized as "constantly evolving in language use" (Croft 2001: 367). In this paper, I use Large-Number-of-Rare-Events (LNRE) modeling of lexical distributions (Baayen 2001), and explore recent changes (of approximately 40 years) in the grammar of spoken English from a construction grammar perspective. The focus is on the lexical and constructional richness of the English attributive and predicative adjective constructions (e.g. *a new floor* and *I'm lucky*). The analyses are based on the sample collected from the Diachronic Corpus of Present-Day Spoken English (DCPSE), which consists of two spoken corpora of the London-Lund Corpus (LLC) and the British component of the International Corpus of English (ICE-GB). LLC covers the time periods from the late 1960s to the early 1980s, while ICE-GB holds data from the 1990s. To give the basic statistics of the sample, the vocabulary size (number of types, *V*) of attributive adjectives is 2019 (LLC) and 2041 (ICE-GB), while the *V* of predicative adjectives is 1193 (LLC) and 1119 (ICE-GB). The sample size (number of tokens, *N*) of attributive adjectives, on the other hand, is 9880 (LLC) and 9199 (ICE-GB), while the *N* of predicative adjectives is 4719 (LLC) and 4292 (ICE-GB).

Based on Baayen's (1992) *P* measure of productivity, I first show in terms of "lexical" richness that attributive adjectives were more productive (by "productive", I mean the increase in types) in the 1990s than in the 1960s. As for predicative adjectives, the change was more gradual, but they were also more productive (in types) in the 1990s than in the 1960s. Both attributive and predicative adjectives in the 1990s had a large proportion of *hapax legomena* and other low frequency classes, which indicates that they gained greater "type" richness than in the 1960s. The overall results also suggest that predicative adjectives were generally more productive (in types) than attributive adjectives from the 1960s up to the 1990s.

After discussing lexical richness of attributive and predicative adjectives, I turn to "constructional" richness. Constructional richness is an estimate of how rich a construction is (in types). In the case of the attributive and predicative adjective constructions, what is first required for computing constructional richness is identification of words that fill the slots of ADJECTIVE and HEAD-NOUN (in the case of attribution) and the slots of SUBJECT, VERB, and ADJECTIVE (in the case of predication). The results, evaluated in terms of Baayen's *P*, are that the attributive adjective construction gained greater type richness in the 1990s, whereas the predicative adjective construction was slightly richer back in the 1960s. Research into constructional richness thus adds a new insight into how the grammar of spoken English changed between the 1960s and the 1990s.

In this paper, I also use vocabulary growth curves to gain an understanding of how the *V* would increase if one kept encountering new types. To that end, I turn to the sample to fit an LNRE model, and provide expected values for the *V* and the spectrum elements at smaller and larger sample sizes (i.e. interpolation and extrapolation). Attributive and predicative adjectives as well as their combinations with other relevant words collected from both corpora (LLC and ICE-GB) are examined by means of an LNRE model, whereby the lexical and constructional richness are scrutinized.

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Adjectives and usage-patterns in the [X *enough to* VERB]-construction

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Background

Recent constructionist research into adjectival gradability suggests that scalar adjectival constructions may feature implied relations of causality (e.g. Bergen & Binsted 2004, Fortuin 2013). The [X *enough to* VERB]-construction appears to be one such construction:

(1) A couple of them were just puppies, but old enough to know it was good-bye. (COCA 2012 FIC AntiocRev)
(2) But every time I try to get close enough to touch one, the mother shows her yellow teeth and growls. (COCA 2012 FIC Bk:IntoFreeNovel)
(3) With its 18-inch barrel and collapsible stock, it is quite maneuverabe and is light enough to carry with a scope mounted. (COCA 2012 MAG OutdoorLife)

The above examples suggest that the construction involves an implied pragmatic relation of force-dynamics between [X *enough*] and the infinitive clause, based on Johnson's (1987) force-dynamic image schema of ENABLEMENT (Fortuin 2013 calls this function SUFFICIENCY). In this paper, we will explore the construction in the perspective of usage-based construction grammar with a view to gaining insight into its functionality and mapping some of its usage-patterns. Making use of data from the 2012-section of Davies' (2012) *COCA*, a number of corpus methods are applied in our analysis of the construction. For instance, a covarying collexeme analysis (Stefanowitsch & Gries 2004) indicates that the construction does indeed set up a relation of ENABLEMENT, with semantically coherent ADJ-V pairs such as *cool-handle*, *small-fit*, *heavy-sink*, *smart-know*, and *sensitive-detect* appearing among the most strongly coattracted lexeme pairs in the construction in the corpus. While the pairs mentioned above, and the examples in (1-3), feature adjectives in the X-position, we may also find nouns and adverbs in that position:

(4) I hope you guys will be gentlemen enough to come and find me in heaven and tell me you're sorry. (COCA 2012 SPOK NBC_Dateline)
(5) Not even light travels fast enough to escape it. (COCA 2012 NEWS CSMonitor)

A simple frequency analysis of the distribution of the three word classes in the X-position suggests that adjectives (n = 720 76.7%) are the most likely candidate to occur, followed by adverbs (n = 202, 21.5%), and then nouns (n = 17, 1.8%). Given that the propositional act function of both adjectives and adverbs is modification while that of nouns is reference (Croft 2003: 184-188), it might be tempting to set up a dichotomy between [ADJ/ADV *enough to* V] and [N *enough to* V]. However, if we take into consideration syntactic functions, we find that [ADJ *enough to* V] and [N *enough to* V] behave alike, appearing primarily in predicative functions, while [ADV *enough to* V] appears in adverbial functions. This suggests that [X *enough to* V] covers two constructions: an adverbial one and an adjectival one. In the latter, gradable adjectives prototypically appear in X-position, and nouns appear to adopt the scalar adjectival features of the construction, as seen in (4). It is further interesting to note that, with a preference for predicative syntactic functions, this construction falls under Croft's (2003: 185) category of constructions which are marked codings of the propositional act function of predication.

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Underspecification and inference at the adjective-adverb interface in Romance and English

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Background

In both Romance and English, adjectives are directly converted to adverbs: *To drive slow. To go direct.* (cf. Sp. *conducir lento, ir directo*). As pointed out by Author (2014), the so-called short form of the adverb belongs to the oral tradition of English and Romance (e.g. higher frequency in dialects and in the New World). By contrast, written standard tends to prefer derived adverbs with the suffixes *–ly* or, in Romance, *–ment(e)*. From a cognitive point of view, the short forms become interesting when they conserve adjectival morphological or semantic features. In the domain of morphology, adverbial agreement is a popular phenomenon in Romance (e.g. Sp. *vamos directos*) (cf. Ledgeway, 2010, Author, in print). In the domain of semantics, adjectival features are conserved in *to eat spicy*, where *spicy* refers to a quality of the food. On a more abstract level, however, a manner interpretation is possible as well, e.g. in terms of a general behavior (*Mexicans eat spicy*). Sometimes, concrete interpretations parallel metaphorical ones: Fr. *Voir grand* 'to see sth. big', e.g. *Mes enfants, je les vois plutôt grands déjà* vs. Fr. *Voir grand* 'to think big = to have ambitious projects'. Metonymy can also be observed: Fr. *Les cheminées fument bleu* 'The chimneys smoke blue'. In this case, the modifier *bleu* does not refer to the chimneys but denotes a quality of the smoke. In an ever broader sense, the short adverbs may denote something which can only be identified by inferentially analyzing the whole event frame: Fr. *baiser utile* 'lit. to fuck useful = to subordinate sex to other goals'. The opposition of *event-oriented* adverbs of manner and *participant-oriented* secondary predicates (Schultze-Berndt / Himmelmann 2004) is too simple in order to give a coherent account of the complex semantic relations that can be observed. In a certain sense, short adverbs can be considered underspecified modifiers which allow for a wide range of inferential interpretations (cf. also Fr. *rêver tricolore, rire jaune, cravater large, truander petit*). The purpose of the paper is to give a systematic account of the cognitive features that are salient in the event-schemes evoked by verb-modifier collocations. We assume that an adequate analysis is possible relating the evoked "scene" to formal "frame" elements (Fillmore 1977). In this sense, inflection is a formal frame element in Romance that may give salience to a specific feature of the scene (cf. "profiling" (Langacker 1999)). We expect that the scene-frame-relations observed can be attributed to more abstract types of cognitive processing with metaphorical, metonymic and freer types of psychological association. The general topics discussed in Cognitive Linguistics are promising for this purpose (e.g. Croft 1991, 1993, Cruse 1982, Honeste 2001, Paradis 2001, Deignan 2003, 2007, Jackendoff 1996, Lakoff / Turner 1989, Turner / Fauconnier 1995, 2000).

Adjective acquisition in children from high and low SES families: evidence from spontaneous speech and structured elicitation

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Background

In contrast to nouns and verbs, adjectives have often been neglected in research (cf. Meltzer-Asscher & Thompson 2014) because considered to be a secondary category in different respects (lexically, semantically, grammatically, cf. Ravid et al. 2013). Given their secondary nature, adjectives have not only been shown to be diagnostic for the detection of specific language impairment in children (Leonard 1998, Marshall & Van der Lely 2007, Fürst et al. 2011), but also especially difficult for children from low socio-economic status (SES) families who, due to their poorer linguistic environment (Hart & Risley 1995, Rowe 2008), show a slower grammatical development and score lower at adjective agreement tasks than their high SES peers at gradeschool age (Ravid & Schiff 2012).

Due to the opaque nature of German adjective inflection which contains not only many syncretisms but also many different forms related to gender, number, case, and definiteness, German adjective agreement is difficult for young children acquiring German as their L1 who make more adjective agreement errors than children acquiring other first languages (cf. Korecky-Kröll & Dressler, in press). German adjective gradation as a low frequency phenomenon is acquired relatively late and also shows considerable variation in adult use (e.g. positive *fromm* – comparative *frommer* or *frömmer* – am *frommsten/frömmsten* 'pious').

Based on the spontaneous speech data of 24 monolingual German-speaking children (12 from high SES, 12 from low SES families) collected over a period of 1 ½ years from age 3 to age 4;6, we demonstrate that low SES children and parents produce lexically and morphologically less diverse adjectives than high SES children and parents and that this gap widens with age. Vocabulary measures of children's spontaneous production data are highly correlated to their scores in a passive vocabulary test. A structured adjective gradation task, in which children have to form comparatives and superlatives from given positive forms, completes the picture: low SES children refuse the test more often and score lower than their high SES peers.

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Non-essential non-constituency: depictive adjectival secondary predicates in Supyire

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It has been claimed that non-constituency should be considered a defining characteristic of secondary predicates: Schultze-Berndt and Himmelmann (2004, see also Himmelmann and Schultze-Berndt 2005) state as their 5th criterion for identifying depictive secondary predicates: "The depictive does not form a low-level constituent with the controller, i.e. it does not function as a modifier of the controller …" Supyire (Gur, Niger-Congo) adjectives which function as depictive secondary predicates do, however, appear to "form a low-level constituent" with the noun they are predicated of. When the adjective agrees in definiteness with its "head noun", the sentence is typically ambiguous, as in the following example:

(1) Mɔbílí-ge niŋ-ga-g' á kàrè.
truck-DEF.G2S ADJ-empty-DEF.G2S PERF go
a. 'The truck left empty.' depictive secondary predicate interpretation
b. 'The empty truck left.' restrictive adjective interpretation

When the adjective does not agree in definiteness with the noun, only the secondary predicate interpretation is possible:

(2) Mɔbílí-ge niŋ-ga-g' a kàrè.
truck-DEF.G2S ADJ-empty-G2S PERF go
'The truck left empty.'

In both cases, the depictive adjective behaves syntactically in all respects as if it "forms a low-level constituent" with the noun (e.g. in topicalisation and focalisation). Creissels and Sambou (2013:289) describe a similar construction with similar syntactic behavior in Mandinka (Mande, Niger-Congo), and note "This [the topicalisation of the noun + adjective] suggests that the predicative extension [their term for the type of adjective] forms a constituent with the noun it follows, which is rather unexpected for a secondary predicate." (my translation) It is indeed unexpected if one accepts the common linguistic view of the essential role of constituency (or in this case, non-constituency) in the analysis and interpretation of sentences.

Rather than being an essential characteristic of syntax, Langacker (2008:207) suggests that constituency is "flexible, variable, and non-essential". It does not appear to be the case that the different interpretations of (1) can be attributed to different construals of constituency, with the adjective either "inside" or "outside" of a noun phrase headed by the modified noun. Instead, in this case the constituency of the sentence in respect to the noun and adjective, is non-essential for its interpretation. The ambiguity arises from another source. The other criteria listed by Schultze-Berndt and Himmelmann (2004) all hold for the depictive interpretation of (1), in particular their first criterion: "the state of affairs expressed by the depictive holds within the time frame of the eventuality expressed by the main predicate". It has often been observed that depictive secondary predicate adjectives must be "stage-level" (temporary) and not "individual-level" (permanent). Thus in addition to the correspondance by which the trajector of the adjective is instantiated by the profile of the noun which it modifies (a characteristic which secondary predicate adjectives share with restrictive ones) there is an additional correspondance between the time interval in the conceptual base of the temporary adjective and the time interval in the conceptualization of the primary predicate. This correspondance, which cuts across levels of "constituency" in the manner envisaged in Langacker (2008: 204f), is missing in the restrictive adjective construal (1b).

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Non-essential non-constituency: adjectival secondary predicates in Supyire

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Cognitive Linguistics and the Evolution of Language

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Background

The past decades have seen increasing interest in what has been called "the hardest problem in science" (Christiansen & Kirby 2003), namely the origin and evolution of language. Language evolution research has adopted a variety of approaches and methodologies to investigate the nature, structure, and development of language. Much of this work has focused on the cognitive factors involved in language and communication (cf. e.g. Hurford 2007, 2012). Overall, research in evolutionary linguistics shares many important goals with Cognitive Linguistics. Recognising these similarities, some researchers have begun to combine insights from both frameworks in their investigation of phenomena like language acquisition (e.g. Tomasello 2003), language change (e.g. Heine & Kuteva 2007), as well as language processing and use (e.g. Bybee 2010). Conversely, cognitive-linguistic theorising has the potential to inform scenarios of language evolution, as a previous theme session at ICLC-10, organised by Arie Verhagen and Jordan Zlatev, has already demonstrated. As both fields have developed at a rapid pace since then, this theme session aims to extend the dialogue between both frameworks by bringing together researchers from different disciplines investigating the evolution of language from multiple perspectives.

Both in Cognitive Linguistics and in most strands of research within evolutionary linguistics, language is seen as inextricably intertwined with and shaped by cognitive, interactional, environmental, and cultural factors. The concepts of embodiment and intersubjectivity, which figure prominently in much cognitive-linguistic research (cf. e.g. Verhagen 2005; Ziemke, Zlatev & Frank 2007; Bergen 2012), have important ramifications for potential scenarios of language evolution. In addition, the importance of taking the multimodal nature of language into account has been recognised in both research areas. This theme session focuses on three aspects connected to these issues:

a) Cognitive factors and constraints involved in the emergence of linguistic structure, including aspects such as iconicity and sound symbolism;
b) The role of interaction and embodied intersubjectivity;
c) The multimodal nature of language and its role in language evolution.

In line with the special theme of ICLC-13, "Bringing together theory and method", this theme session aims at bringing together different theories and methods to gain a better understanding of the origins of language and human cognition. As both cognitive and evolutionary linguistics combine a broad variety of methodological approaches, they are ideally suited to cross-fertilise each other. The study of language evolution is necessarily a highly interdisciplinary enterprise, relying on evidence from biology, historical linguistics, psycholinguistics, linguistic typology, computational modelling, and many other areas (cf. Tallerman & Gibson 2012). Likewise, Cognitive Linguistics has become a highly integrative research paradigm that thoroughly embraces converging evidence from multiple disciplines and different methodological approaches (cf. e.g. Ruiz de Mendoza Ibáñez & Peña Cervel 2005). As this workshop aims to demonstrate, combining insights from Cognitive Linguistics and language evolution research can thus contribute to an integrated understanding of language as a complex adaptive system situated and continually evolving at the interconnected timescales of ontogenetic development, biological evolution, and sociocultural transmission.

Contributors

Vyvyan Evans. Bangor University. The Human Meaning-Making Engine: Its nature and origins.

Roslyn Frank. University of Iowa. The relevance of a 'Complex Adaptive Systems' approach to 'language'.

Sabine van der Ham, Hannah Little, Kerem Eryılmaz & Bart de Boer. Vrije Universiteit Brussel. Experimental evidence on the emergence of phonological structure.

Sean Roberts & Stephen Levinson. MPI for Psycholinguistics, Nijmegen. On-line pressures for turn-taking constrain the cultural evolution of word order.

Chris Sinha. Hunan University. Eco-Evo-Devo. Biocultural synergies in language evolution.

Arie Verhagen. University of Leiden. Public and private communication: Stages in the evolution of language and cognition?

James Winters. University of Edinburgh. Linguistic systems adapt to their contextual niche.

Jordan Zlatev[1], Sławomir Wacewicz[2], Przemysław Żywiczyński[2] & Joost van de Weijer[1]. [1]Lund University, [2]Nicolaus Copernicus University, Torun. Communicating events using bodily mimesis with and without vocalization.

Discussant: James R. Hurford. University of Edinburgh.

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The Human Meaning-Making Engine: Its nature and origins

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Background

Until relatively recent, the consensus in the language and cognitive sciences was that language emerged relatively recently, perhaps no more than 100,000 years ago (e.g., Bickerton 2002; Chomsky 2010; Mithen 1996). But over the last decade, new findings from paleo-archaeology, and advances in genetic dating techniques, in primatology, as well as language science have challenged this view. Recent evidence suggests, for instance, that *Homo neanderthalensis* may have had human-like language (Dediu and Levinson 2013, Roebroek et al. 2014 for reviews). And this implies that that the last common ancestor of *H. sapiens* and *H. neatherthalensis* may also have had language-like capacity, going back perhaps as far as 500,000, perhaps earlier (Deacon 1997; Tomasello 2014).

Recent proposals have moved away from the view that language emerged as a macro-mutation: an otherwise unheralded speciation event. Increasingly, the focus has shifted to the raft of changes—beginning with the change that most likely presaged the emergence of the genus *Homo*, some 2.5 million years ago—that set our genus on the path towards language. Important proposals have focused on **interactional intelligence** (Levinson 2005), and the shift from **single intentionality**—the hallmark of thought and interaction evident in the great apes—towards **joint intentionality** in modern humans (and probably in earlier species of *Homo* (Tomasello 2014). Together, these proposals point to the emergence of a unique **cooperative intelligence** (Author 2014, In press), which was the requisite precursor for the emergence of language.

Within this revised understanding of the evolutionary context that led to language, one significant question concerns how, exactly, ancestral humans co-opted their emerging cooperative intelligence in giving rise to language; given that language is fundamentally symbolic in nature, the cognitive anthropologist, Terrence Deacon, has framed the problem in terms of explaining how ancestral humans were able to "cross the symbolic threshold". Language, Deacon argues, goes beyond the rudimentary communicative systems of other species (e.g., Author 2014; Hurford 2007) by moving from indexical reference –relations between vocalisations and objects/events in the world—to symbolic reference—the ability to develop relationships between words—paving the way for syntax. But something is still missing from this picture.

In this talk I introduce and develop two notions to fill out the emerging picture, briefly described above. First, language emerged, I propose, in terms of a co-evolving relationship with the conceptual system. While words, and other grammatical constructions, encode what I term **parametric knowledge**—schematic representations—the conceptual system, the human repository of concepts, encodes analogue knowledge—a type of rich, multimodal information. Together, these two systems—the linguistic and the conceptual—facilitate what I dub the human meaning-making engine (Author, In press); language interfaces with the conceptual system, providing an executive control system (Barsalou et al. 2009; Bergen 2012; Author 2009). In short, language provides the 'how' of linguistically-mediated meaning, while representations in the conceptual system provide the 'what'. And their symbiotic relationship enables language to bootstrap rich, multimodal knowledge representations/concepts, for purposes of communication. I spell out the nature of parametric and analogue knowledge, and illustrate how they interact, based on a survey of the state of the art in cognitive linguistics and cognitive science more generally.

The second proposal is that this shift was made possible in two stages, relating to Deacon's notion of crossing "the symbolic threshold". In short, for language to emerge as a fully-fledged system, one capable of providing a level of parametric knowledge representation, grammar had to emerge—the development of a variety of distinct lexical categories, eventually paving the way for recursive thought (Heine and Kuteva 2007). The first stage, logically, had to be a symbolic reference in what I term a **words-to-world direction**, bootstrapping extant capacities that *Autralopithecines*, and later ancestral *Homo* shared with the great apes. But the emergence of a grammatical capacity is also associated with a shift towards a **words-to-words direction** symbolic reference: words and other grammatical constructions can symbolically refer to other symbolic units. For instance, relational words, such as prepositions, verbs, and so on have **elaboration sites** (Langacker 1987), which are 'completed' by nominal forms: the preposition *over* has 'slots' for a trajector and a landmark; part of the parametric representation of this form involves words-to-words symbolic reference. The parametric meaning of *over* is completed by the nominal elements that fill these slots. I introduce these notions with detailed examples. These proposals will have important implications for how researchers in cognitive linguistics, and cognitive science, continue to reflect on the co-evolved relationship between language and other aspects of mind.

The relevance of a 'Complex Adaptive Systems' approach to 'language': A bridge for increased dialogue between the disciplines of cognitive and evolutionary linguistics.

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Background

This paper examines how historical cognitive linguistics and those working on topics broadly related to language evolution can benefit methodologically by viewing 'language' as a 'complex adaptive system'. That languages are best understood as complex adaptive systems (CAS) was introduced initially in computational evolutionary linguistics, a discipline that was and remains inspired primarily by analogies to biological, systems theoretical approaches to the evolution of language. How the CAS approach serves to replace older historical linguistic notions of languages as 'organisms' and as 'species' is explained as well as how the CAS approach can be generalized to encompass linguistic domains and then utilized profitably to study language evolution and change across time. The talk begins with a brief review of several of the dominant conceptual definitions that have been used to define 'language' in the past, e.g., 19th century analogues that conceptualized languages as the counterpart of 'species' as well as later 20th century attempts to reconceptualize 'language' by building on the notion of population genetics. An overview of the CAS approach and its implementation in linguistics is provided with an emphasis on stigmergic, embodied, usage-based and socio-culturally situated language studies. The paper concludes by arguing that cognitive linguistics can benefit from an understanding of the CAS approach to language. Recognizing that research both in the field of cognitive linguistics and language evolution is by necessity a highly interdisciplinary undertaking, a CAS approach to language can contribute to the dialogue that is already underway across these disciplines. In conclusion, acquiring a greater familiarity with CAS terminology will allow cognitive linguists working on topics in diachronic linguistics to converse more readily with those who are focused on distributed cognition, emergence, the 'extended mind' and computational approaches to modeling language and language evolution. This, in turn, will facilitate the kind of cross-disciplinary dialogue that is needed to move away from the tenets of 'classic cognitivism' and toward those that characterize 'enactive cognitivism' and a dynamic systems approach to language and language evolution.

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Experimental Evidence on the Emergence of Phonological Structure

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Background

We present two sets of experiments that investigate how individual learning biases and cultural transmission interact to shape language, specifically, phonological structure. Previously, mathematical and computational models have shown that the frequency with which different linguistic variants occur is an indirect reflection of the learning biases of the individuals learning the language (Kirby, Dowman & Griffiths, 2007). Specifically, how individuals generalize linguistic variation they observe is crucial: if individuals show a small tendency for overgeneralization, links between observed individual tendencies and typological variation will be much less visible than if individuals reproduce variation in their input more faithfully. Indeed, recent experimental evidence suggests that human learners tend to overgeneralize within transmission chains (Smith & Wonnacott, 2010), indicating that the link between typology and cognition is less direct than we would hope.

We will discuss previous work (also summarized in Verhoef, Kirby, and de Boer, 2014) that investigated the emergence of phonological structure as the result of cognitive biases, as well as summarize our own ongoing work which focusses on how phonological structure and phoneme inventories arise as the result of individual cognitive biases, and whether these biases are domain specific. As transmission is a crucial factor in shaping language, the experiments not only investigate acquisition, but also how linguistic information is reproduced, and in some variants of the experiment, cultural transmission is modeled by participants learning the output of other participants. Also, we investigate whether the learning mechanisms involved are language-specific by using non-linguistic stimuli in a controlled way in some conditions.

In the first set of experiments we used artificial stimuli (with a controlled number of features different from speech) from a continuous signaling space to investigate how individuals regularize or categorize input when they reproduce speech-like signals from a skewed distribution. We investigated these processes on an individual level and in cultural transmission chains. Participants showed a general purpose learning bias: rather than reproducing more extreme (more skewed) distributions, they reproduce more centered distributions. These findings go against the domain-specific hypothesis that states that the emergence of sound categories is driven by a bias to make categories maximally distinct.

In the second set of experiments, participants can produce signals that differ in complexity in controlled ways, in order to better understand whether functional factors, cultural factors or individual learning biases affect the emergence of phonological patterning. We also examine how the nature of signal-meaning mapping within these experiments informs the nature of the structure which emerges.

We will argue that artificial language learning experiments, in which signals are removed from participants' existing linguistic signaling systems, can inform where phonological acquisition biases, and as a result phonological universals, may come from.

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On-line pressures from turn taking constrain the cultural evolution of word order

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Background

The evolution of linguistic structure is constrained by various cognitive pressures. For example, basic word order is hypothesised to be adapted to pressures on efficient storage or processing (e.g. Ferrer-i-Cancho, 2014) or the effectiveness of conveying semantic information (Goldin-Meadow et al, 2008; Schouwstra & de Swart, 2014). While these effects are part of the story, we suggest that structural features of language also adapt to the cognitive constraints on language processing and planning imposed by taking turns at talk in a conversation.

The primary ecology of language is interaction – speakers taking turns in a conversation (Levinson, 2006). Because speakers may be competing to take a turn, and because delayed turns are often taken as meaningful, speakers attempt to minimize gaps and overlaps between turns (Sacks, Schegloff & Jefferson, 1974). This introduces a pressure on processing. The average gap between questions and answers is around 200ms, regardless of the language's basic word order (Stivers et al., 2009), but the time to plan and begin executing a single word is at least 600ms (Indefrey, 2011). This means that speakers must begin planning their response before they have heard the end of the previous turn. That is, there is a 'crunch zone' around the ends of turns where a participant in a conversation is simultaneously processing what is being said and planning their answer.

The structure of language must adapt to this harsh ecology of turn-taking in interaction (Schegloff, 1996). This could include a variety of adaptations, but we focus on basic word order as an illustration of how languages might adapt to the constraints of turn taking. If the verb provides the syntactic frame for a sentence and is a crucial conveyor of the pragmatic action, then its position in the sentence might adapt to several pressures. Verbs in final position give speakers more time to plan the most complex component of the turn. On the other hand, verbs in initial position allow the listener to interpret the previous turn and start planning their own turn earlier.

In order to investigate the implications for the distribution of basic word order, we present an agent-based model of cultural evolution. When the start of planning for the next turn is constrained by the position of the verb, and when agents take part in multi-turn conversations, the stable distribution of word orders matches the actual distribution reasonably well. We suggest that the interface of cognition and interaction should be a more central part of the story of language evolution.

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Eco-Evo-Devo: Biocultural synergies in language evolution

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Background

Cultures are ensembles of species-specific cultural-cognitive niches sustained by material and symbolic artefacts, and organized by cultural-cognitive schemas. Language is the basis for symbolic cognitive artefacts, for social institutions and for normative socially-shared cognition. I propose a unification of niche construction theory with linguistic theory; with theories of the linguistic/semiotic construction of social institutions; and with ontogenetic developmental theory. The account that I propose can be considered as a culture-led co-evolutionary approach (Christiansen and Chater, 2008; Dor and Jablonka, 2014) that extends "evo-devo" to "eco-evo-devo"; based on the synthesis of epigenetic socio-naturalism (Sinha, 1988, 2006) with niche construction theory (Laland *et al.*, 2000).

The nativist modular view of the language capacity denies that language is an artefact. However, many species construct "artefactual" niches, and language itself may be considered as a transcultural component of the species-specific human biocultural niche (Sinha 2009, 2014). Treating language as a biocultural niche yields a new perspective on both the human language capacity and on the evolution of this capacity. It also enables us to understand the significance of language as the symbolic ground of the special subclass of *symbolic cognitive artefacts*. This subclass can be defined as comprising those artefacts that support symbolic and conceptual processes in abstract conceptual domains. Cultural and cognitive schemas organizing at least some relevant conceptual domains may be considered, I shall argue, as *dependent upon*, and not merely *expressed by*, the employment of symbolic artefacts, which have a quasi-agentive status in cultural and cognitive practices. Intentionally designed symbolic artefacts, just as much as language, are constitutive parts of the human biocultural niche, and are of fundamental importance in human cultural-cognitive evolution.

To qualify as a symbolic artefact, the artefact must have a representational function, in the Bühlerian sense. All artefacts have a *signifying* status, inasmuch as they functionally "count as" instances of the artefact class of which they are a member (Searle, 1995); and their material form signifies their canonical function (Sinha and Rodríguez, 2008). However, to be a *symbolic* artefact, the artefact must also *represent* something outside itself, through a sign function materially embodied in the artefact. All such sign functions are ultimately grounded in language, although they also frequently incorporate iconic relations.

The recruitment of objects as signs in interactive contexts is of great importance in cognitive development (Sinha, 2005). Cultural-cognitive niches are not static environments, but develop along with the developing organism, and are subject to co-evolutionary selection in synergy with the organism. Culture-specific developmental pathways are supported by epigenetic developmental processes, and augmented epigenesis, with concomitant neural plasticity, was selected in the course of human evolution, in which the niche of infancy played a crucial role. In this perspective, ontogenetic developmental processes are a crucial component, both causal and consequential, of the evolution of the human biocultural complex, including language.

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Public and private communication: Stages in the evolution of language and cognition?

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Background

In a series of studies, Tomasello has laid out a comprehensive theory of the evolution of both human language and human cognition, and how the two are connected. Tomasello (2009, 2014) explicitly defends a two-stage model (still somewhat implicit in Tomasello (2008)): The evolution of mutualistic cooperation and communication – 'private' cooperative communication between specific individuals (having been) engaged in one or more collaborative projects – preceded the evolution of group level practices of cooperation and communication: 'public' language and culture. Cognitively: "joint" intentionality emerged first and evolved into what is essentially still its present state, which set the stage for the subsequent evolution of "collective" intentionality. An alternative scenario is that these two kinds of processes and capacities evolved 'in tandem': A gradual increase in the role of culture (learned patterns of behaviour) produced differences and thus competition between groups of (proto-)humans, which in turn provided selection pressures for an increased capability and motivation of individuals to engage in collaborative activities with others (cf. Boyd & Richerson 2006).

In the two-stage view, argumentative language use and explicit reasoning, including the use of negation and conditional constructions, belong entirely to the second stage (Tomasello 2014: 107ff). Indeed, Tomasello (2014) depicts argumentation as an advanced form of language use, developed and practised in the context of public debates. However, linguistic research suggests that all language use, also in conversation, is fundamentally argumentative, in the sense of evoking multiple viewpoints (as with the use of negation) and proposing ways of deciding between them (Verhagen 2008, 2015; cf. Mercier & Sperber 2011). In terms of linguistic regularities, a public debate and a two party conversation do not differ fundamentally (the difference may mostly be one of linguistic *awareness*). Such a lack of systematic reflexes of the assumed two stages, in the structure of present day languages supports the cultural group selection scenario more than the two-stage scenario.

Moreover, taking the public character of linguistic communication as basic provides a way of resolving a problem of infinite regress. In the 'cascade' of selective processes described by Hurford (2007: 304), mutualistic cooperation and reciprocal altruism require an ability of recursive mind reading – which may go on indefinitely – but the alternative scenario does not: the assumption that the cultural values of symbols (systematic patterns of communicative behaviour) are universally accessible (in the group) suffices. The scenario of cultural group selection may thus be *less* demanding of cognitive resources than the two-stage view. In fact, it may well have provided the basis for the evolution of recursive mind reading, by creating patterns of behaviour that allow for analysis in these terms in certain circumstances even if they have not been produced by it – an instance of the idea that the emergence of novel, more complex cognition may be facilitated by relevant structure in the external environment that emerges for independent reasons (cf. Zuidema & Verhagen 2010).

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Linguistic systems adapt to their contextual niche

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Background

It is well established that context plays a fundamental role in how we learn and use language. Our present study is specifically focused on the *situational context*: the immediate communicative environment in which an utterance is situated (Evans & Green, 2006: 221) and how it influences the distinctions a speaker needs to convey. If the situational context plays a role in how language is structured, then the general observation that *some meaning is encoded* and *some is inferred* (Wedgwood, 2007: 652) leaves open the questions: (i) To what extent does the situational context influence the encoding of features in the linguistic system? (ii) How does the effect of the situational context work its way into the structure of language? To help answer these questions we investigate how situational context links short-term language use with the long-term emergence of different types of language systems.

Using an artificial language paradigm, we experimentally simulate cultural transmission in a pair-based communication game setup (cf. Galantucci, Garrod & Roberts, 2012). Participants learn an artificial language which provides labels for a set of pictures, 'meanings' to be communicated. These stimuli vary on the dimension of shape, with each referent also having a unique, idiosyncratic element. After learning the language, participants play a series of communication games with their partner, taking turns to describe pictures for each other. We modified the situational context in which communication took place by manipulating whether the feature dimension of shape was relevant or not for a discrimination task: for example, some participants would encounter only situational contexts in which the objects to be discriminated during communication differed in shape, whereas others would be confronted with situational contexts in which the objects to be discriminated during communication were of the same shape. Finally, these pairs of participants were arranged into transmission chains (Kirby, Cornish & Smith, 2008), such that the language produced during communication by the *n*th pair in a chain became the language that the *n*+1th pair attempted to learn. This method allows us to investigate how the artificial languages change and evolve as they are adapted to meet the participants' communicative needs and/or as they are passed from individual to individual via learning.

Our findings support the general hypothesis that language structure adapts to the situational contexts in which it is learned and used, with short-term strategies for conveying the intended meaning feeding back into long-term, system-wider changes. In our experiment, languages gradually evolved to encode information relevant to the task of achieving communicative success in context, resulting in different language systems depending on the context. In the *Shape-Same condition*, where the dimension of shape was always shared for stimuli pairings, holistic systems of communication emerged, whilst in the *Shape-Different* condition, where the dimension of shape always differed for stimuli pairings, the system generalised and became underspecified. For the *Mixed* condition, which featured both Shape-Same and Shape-Different situational contexts, the systems that emerged were systematically structured: that is, both shape category and individual identity were encoded in the linguistic signal. These divergent systems arise given a very simple meaning space, through slight manipulations to the situational context. This lends support to the notion that languages adapt to their contextual niche.

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Communicating events using bodily mimesis with and without vocalization

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Background

After years of debate between "gesture-first" and "speech-first" theories of language origins, there has been a recent tendency to adopt a compromise approach: language was "multimodal" from the start, and remains so to this day (e.g. McNeill 2012). Still, we should be careful before we adopt this resolution too easily. First, multimodality does not exclude that the balance of communicative load may have shifted from the gestural/visual to the vocal/audio channel over a prolonged period of time (Collins 2013). Second, there is considerable evidence that this may indeed be the case, in support of the bodily mimesis hypothesis of language origins, stating that the key evolutionary breakthrough was based on action imitation and event reenactment (see e.g. Zlatev 2014).

One kind of evidence is the greater potential for iconic representation in bodily reenactment compared to in vocalization. In a recent experimental study where a "director" had to communicate to a "matcher" a set of 24 different concepts, divided in the categories Emotion, Action and Object, by means of vocalization, reenactment or both (i.e. multi-modally), it was shown that vocalization alone was least effective, and there was no advantage for the multimodal condition compared to reenactment alone (Fay, Arbib & Garrod 2013). However, it is possible that both the set of concepts to be communicated and the overall task were too simple, and that a more challenging set-up would show an advantage for multimodal mimesis over bodily mimesis without vocalization. To test this, we designed and preformed the following study.

What was to be communicated were not simple concepts, but *events*, each one involving an Action (KISS, WAVE, SLAP, PUSH), Agent (MAN, WOMAN, BOY, GIRL) and Patient (MAN, WOMAN, BOY, GIRL – but always different from Agent). On this basis, a matrix of 20 events with 5 Agent-Patient combinations for each of the 4 actions was created. An artist drew these 20 events as simple cartoon-like pictures, with unique images of agents and patients in each picture; these were used in the remaining parts of the study. In the second step, 4 student actors were given the 20 event-pictures, and asked to "act out" 16 randomly pre-selected of these to "matchers" in two conditions: (a) without (VIS) and (b) with non-linguistic vocalization (VIS+VOC). The order of the two conditions and the gender of the actor were counterbalanced. The matchers were given the matrices of event-pictures and had to "guess" which one was being enacted. The performance of the actors was video-recorded, resulting in a stimulus material of 2 (Condition) x 4 (Actor/Round) x 16 (Trial) event representations of 10-20 seconds each. Note that due to the randomization, the events acted out by each Actor/Round did not completely overlap.

In the experiment proper, 44 participants, divided in two groups, were shown the 4 (Actor/Round) x 16 video-recorded event reenactments, balanced for condition and condition-order (i.e. each group saw 2 VIS and 2 VIS+VOC rounds, either produced firstly or secondly by the actor). The results (and post-study interviews) showed that the task was indeed difficult, with correct responses per each round (16 trials) ranging from 32% to 66% correct. Interestingly, not only did vocalization not facilitate event identification, but the overall proportion of correct results was significantly *lower* for VIS+VOC (46%) than for VIS (53%). Furthermore, there was a significant interaction between Actor/Round and Condition, and when the results were analyzed it was shown that VIS correct responses were significantly higher than VIS+VOC for the first two actors/rounds. This was reversed for actor/round 3, and the two conditions were virtually equally effective for actor/round 4. In sum, the study shows that vocalization does not necessarily help, and may in some circumstances even be in the way to successful communication. More research is needed to understand why this is the case, and when multimodality may actually help.

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Corpus Methods in Cognitive Linguistics. Research on Concepts & Constructions

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Background
Building on the tradition developed by Dirven *et al.* (1982), Schmid (1993), Geeraerts *et al.* (1994) and Gries (2003), the theme session will focus on usage-based approaches in Cognitive Linguistics. More specifically, the session has two aims:

1. Develop corpus methods for attaining descriptive adequacy.
2. Develop corpus methods for attaining explanatory adequacy.

1. Description and social variation
Given the theoretical assumptions of the Cognitive Linguistics model of language, sociolinguistic variation is integral to structure. Therefore, accounting for this complexity in language description is necessary for descriptive accuracy. This aim continues the line of research represented in Dirven & Kristiansen (2008), Geeraerts *et al*. (2010), Pütz *et al.* (2012), and Reif *et al.* (2013).

2. Explanation and hypothesis testing
Proposals such as (but not restricted to) prototype effects in categorisation, force dynamics in causation, metaphor and metonymy in conceptualisation, frame semantic structuring of argument structure or grounding in construal are central to the paradigm of Cognitive Linguistics. Such theories seek to explain how language production is possible. Examples of recent contributions in this line of research include Gries & Stefanowitsch (2006), Stefanowitsch & Gries (2006), Glynn & Fischer (2010), Glynn & Robinson (2014).

Although these two aims, description and explanation, are inherently related, the theme session hopes to highlight specifically their place in the development of corpus methodology. Studies employing corpora / natural language production that seek to develop the field, in either or both these ways, are presented in this theme session.

The research brought together in this workshop will focus on two non-exclusive questions:

1. The description and explanation of constructional structure in langauge
2. The description and explanation of conceptual structure in langauge

1. Grammatical Constructions
The term grammatical construction is used loosely here to refer to any composite entrenched structure. The studies devoted to constructional research presented here all focus on relatively schematic structures in langauge, such as morpho-syntactic patterns or lexico-syntactic associations. The theoretical paradigm of Cognitive Linguistics and the analytical framework of Construction Grammar are perfectly placed to embrace corpus-driven methods in the study of such phenomena. This theme session showcases 6 studies in this field.

2. Conceptual Structure
Cognitive Linguistics argues that all form is motivated and that this motivation consists in functional-conceptual structuring. Since such phenomena are not directly observable, the use of corpora to identify such structure is not straightforward. The theme session will promote the development of corpus-driven methods in this regard, especially the use of formal structure as an index of conceptual structure and the possibilities for combining qualitative and quantitative techniques in analysis.

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Noriko Matsumoto. Kobe University, Japan. Ongoing Historical Development of Three Types of V-V Sequences in English

Nele Põldvere & Carita Paradis. Lund University, Sweden. On the position and meanings of epistemic complement-taking predicates in spoken British English

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A corpus-based analysis of the construction network of verb complement clauses in Afrikaans

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Background

There are a number of unresolved problems in the analysis of verb complement clauses in the Western Germanic languages. The traditional analysis assumes a highly schematic construction with a matrix clause that takes a dependent clause as complement. This analysis is challenged by three sets of findings. (1) Sociolinguistic research on factors that affect the omission of the complementiser *that* in English leads Thompson (2002) to propose that the "main clause" in some instances should be analysed as a complement-taking phrase with subordinate status, while the main propositional information is presented in the "complement clause". (2) Diessel and Tomasello (2001) and Verhagen (2005) also point to the lexical base of the construction, in terms of which an exemplar-based construction schema gradually becomes more schematic to yield more general constructions. (3) Clear register effects are demonstrated between writing and speech, and between different degrees of formality within writing and speech (Biber 1999).

The challenge is to determine the relationship between the two clauses in verb complementation constructions, and refine the constructional network. Afrikaans provides an ideal case for the analysis of the construction, because like English it allows complement clauses without an overt complementiser in the majority of instances, but like German and Dutch, it shows variation between main clause and subordinate clause word order. The research question is therefore to determine the most accurate constructional network to account for the grammatical patterns observed in Afrikaans.

A corpus analysis of Afrikaans points to a construction network that originates with exemplars in spoken language, with the primary function of interpersonal communication management or joint construal (Verhagen 2005), which is then transferred to written language. In the process, a wider range of functions is added, and the construction becomes more schematic as a wider range of lexical verbs are used in the "matrix clause".

A corpus of Afrikaans is used, comprising a smaller section of informal and formal spoken language (100,000 words) and a larger section of journalism and academic writing (20,000,000 words). The data enable investigation across registers of a range of lexical verbs in different syntactic contexts. A collostructional analysis is undertaken, which also aims to cast light on questions recently raised about this method by Schmid and Küchenhoff (2013)

A clear lexical effect with the verbs *sê* ('say'), *weet* ('know') and *dink* ('think') accounting for the majority of instances of complement constructions emerges, alongside a register effect in which the interpersonal dimension is most prominent in spoken language, shown by a predominance of main clause word orders. More complex patterns of interaction between writer and audience emerge from the written registers, requiring a range of more schematic constructions that make use of overt complementisers and dependent word order. Using a range of multifactorial statistical techniques, a construction network is proposed in which lexical exemplars, different word orders and gradually emerging schematic networks with register-specific functions all serve to characterise the verb complement clause constructions of Afrikaans.

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On the position and meanings of epistemic complement-taking predicates in spoken British English

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Background

This is a corpus study of the use and meanings of epistemic *complement-taking predicates* (CTPs) such as *I think* in (1) – (3):

(1) *I think* that we mustn't worry too much about this.
(2) One of the real damages *I think* that this has done is that it shakes our faith.
(3) Because I said I wanted to go at four thirty *I think*.

As shown in the examples above, *I think*, like most other CTPs, can occur in different positions in a sentence: in an initial (1), medial (2) and final position (3). The positional distribution of epistemic markers and its effect on their discursive meanings has received a great deal of attention in recent linguistic research (e.g. Traugott 2012, Degand 2014). Typically, the left periphery is associated with speaker-oriented meanings and the right periphery with addressee-oriented meanings. The systematic occurrence of CTPs in different positions has raised the question of whether there is a direct correlation between the positional distribution of the verbs and the functions they serve in discourse. Aijmer (1997) automatically classifies initial positions of *I think* as displaying a greater degree of deliberation and authority, with medial and final positions exhibiting opposite values. Dehé and Wichmann (2010), on the other hand, have noted that sentence-initial CTPs often fulfil addressee-oriented functions, such as hedging. However, little attention has been paid to the role of context in the interpretation of position and function.

Couched in the framework of Cognitive Linguistics (Langacker 1987), this study makes use of both qualitative and quantitative methodological techniques, which is necessary for a comprehensive investigation of such multifunctional constructions (Pichler 2013). The data consist of spontaneous conversations between educated adults in university settings, retrieved from the London-Lund Corpus (Svartvik & Quirk 1980). The topics of discussion range from friendly exchanges of the use of sewing machines to highly critical evaluations of university departments. Also, the conversations represent interaction between various age groups, genders and social roles, allowing a close investigation of the relationship between socio-contextual factors and the choice of positional distribution of CTPs.

So far, the results of the analysis indicate that the position and meanings of CTPs are influenced by socio-contextual factors, such as the sensitivity of the topic discussed and the relationship between the speaker and the addressee. What is implied is that the addressee-oriented meanings of CTPs are in fact equally characteristic in initial positions and often preferred in negotiating sensitive topics by speakers with less authority, while medial and final positions tend to be used for reinforcement and assertiveness by speakers with more authority.

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A corpus-driven approach to the study of ANGER in Russian

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Background

The current paper investigates the question whether corpus data-driven approach to the description of emotion conceptual domains can provide an accurate and detailed picture of a domain and if it may be advantageous to the traditional methods in some respects. Traditionally, the works devoted to the study of cognitive or conceptual metaphor (CM) have been based on either researcher intuition, or on data found in dictionaries, thesauruses, and - less frequently - in literary sources and in other smaller collections of data (Charteris-Black, 2004). In the recent years, with the increased availability and sophistication of large language corpora, many researchers began to investigate the possibility of mining large databases for metaphoric data (Deignan, 2005; Stefanowitsch & Gries, 2006). Stefanowitsch and Gries (2006) believe that this approach provides "a strong emphasis on authentic data and the empirical verification of many of the fascinating theoretical claims in the field" (p. 1).

There is no doubt that manually mining corpora for figurative language is not methodologically simple: linguistic realizations of concepts are multiple and variable, making the automatization of searches a challenging proposition. However, some ideas of systematizing the process have been so far developed and discussed in the current literature (Charteris-Black, 2004; Stefanowitsch, 2006; Oster, 2010). In this study, we loosely adopt Oster's (2010) approach and apply it to the study of the emotion concept of ANGER in Russian on the materials of the Russian National Corpus. We start the search with a lexical unit (*serdi-* and *zli-/zlo-*, the two primary terms for ANGER in Russian), run a corpus search and select co-occurrences. For the purposes of this study, we define *co-occurrence* as words and phrases that appear in the context of one to three sentences of the search item and that describe either the experience of the emotion or the behavior associated with the emotion (e.g. *to boil with anger*, *to squint one's eyes in anger*). The extracted words and phrases are then grouped into categories that emerge from the data.

On the one hand, the results of the pilot study support the claims made in the previous literature on the conceptual domain of ANGER in Russian: the data contain multiple linguistic realizations of such conceptual metaphors as ANGER IS HEAT, ANGER IS A LOSS OF CONTROL, ANGER IS A WILD ANIMAL, etc. Many of the instantiations of these metaphors are highly conventionalized and are well described in the research literature. On the other hand, our search identified a few CM groups that, to the best of our knowledge, haven't been yet described in the literature; these include ANGER IS A SHARP WEAPON and HANDS AND FEET ARE CONTAINERS FOR ANGER. In other words, the data-driven approach may help paint a fuller and more detailed picture of the type of conceptual metaphors that express Russian ANGER.

More importantly, this approach to data extraction and analysis highlighted the idea that the study of conceptual domains is incomplete without the consideration of descriptions of literal behaviors associated with an emotion and metonymies. In fact, the data contains many example of the same expressions used literally and figuratively, highlighting the continuum from literal to metonymic to metaphoric conceptualization of ANGER in Russian in particular, and, likely, in languages in general.

Although the approach described in this presentation proposal is not without its limitations, our study provides support for the importance of corpus-based approaches to the study of the conceptual domains of emotion.

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Ongoing Historical Development of Three Types of *V-V* Sequences in English

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Background

This paper describes the ongoing historical development of three types of *V-V* sequences in English, the *come-V*, the *go-V*, and the *help-V* sequences. The developments are discussed in comparison with the uses of the *come/go-and-V* and the *help-to-V* sequences, which are in many ways semantically similar to the *come/go/help-V* sequences, as shown in (1), (2), and (3).

(1) a. Come join us. b. Come and join us.
(2) a. You can go buy food somewhere else. b. You can go and buy food somewhere else.
(3) a. He helped organize the party. b. He helped to organize the party.

We call a member of the pair in (1), (2), and (3) 'semantically competing sequence'. From a semantic standpoint, there is no satisfactory differentiation of the three pairs of semantically competing sequences, respectively. This paper argues that the differences in meaning that different forms exhibit include differences in historical development based on functional differences in meaning.

In order to clarify the developments, this paper proposes a new corpus methodology as a hybrid of three corpus techniques, based on an examination of two corpora, Collins Wordbanks Online (CWO) as a synchronic corpus and the Corpus of Historical American English (COHA) as a diachronic corpus. Two of the three techniques are the corpus-based and the corpus-illustrated techniques employed by Tummers et al (2005). In this paper, we propose the third technique, the corpus-corroborated technique in which previous analyses based on corpus data or the findings of previous studies based on linguists' introspection are examined to see if they are supported by using another corpus or corpora. Our use of corpus methodology is twofold, synchronic and diachronic. Our synchronic approach usually involves a combination of the three techniques. Our diachronic approach is usually based on the corpus-based technique and is closely related to ongoing historical development of a given linguistic structure that has taken place over relatively short spans of time, over decades rather than centuries. This paper makes clear the value of our corpus methodology, and our corpus methodology indicates that the essence of language is its dynamics and plasticity based on prototype effects.

There are three main findings from our corpus data. First, each of the three pairs of sequences indicates the similar distribution of the top ten second verbs used most frequently in CWO. In each of the three types of *V-V* sequences, however, there are one or two second verbs which are judged to be atypical. Such atypical second verbs are judged to be representative of ongoing historical development of each of the three types of *V-V* sequences. Second, with respect to field of discourse, which mean the frequency of use per one million words in six genres on the basis of eleven sub-corpora in CWO, the relatively similar distribution between the *help-V* and the *help-to-V* sequences is observed. By contrast, the significantly different distributions between the *come/go-V* and the *come/go-and-V* sequences are observed. Field of discourse plays a decisive role in explaining the ongoing historical development of each of the three types of *V-V* sequences. Third, the *come/go/help-V* sequences have been recently gaining in currency in that they are replacing the *come/go-and-V* and the *help-to-V* sequences, respectively.

From these findings, it can be concluded that all the three types of *V-V* sequences are undergoing historical development not based on grammaticalization, and that the motivations behind their historical developments are different from one sequence to another. Mair (2004) and Mauri & Sansò (2011) regard the continuation of ongoing historical development that a particular *V-V* sequence represents as a move in the direction of auxiliary. However, this paper demonstrates that it is uncertain whether or not auxiliary-formation of the sequence is a continuing process. In particular, this paper argues that the historical development of the *come-V* sequence is related to hortative-motion device functioning at the discourse level, and that the historical development of the *go-V* sequence is related to three kinds of devices functioning at the discourse level, full-motion device, evaluative-modality device, and aspectual device. In conclusion, the three-types of *V-V* sequences are undergoing different types of historical development, though they are currently undergoing change.

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(In)Direct causation and finite/infinitival complementation in Portuguese: a multifactorial corpus-based and conceptual analysis

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Background

Portuguese causative verbs *fazer* 'to make' and *deixar* 'to let' may be followed either by an infinitival or a finite verb form in the complement structure, like in (1) and (2):

(1) *Os pais fazem/deixam brincar os meninos*
The parents make/let-pres: 3p.p play-inf. the children

(2) *Os pais fazem com que/deixam que os meninos brinquem.*
The parents make-present: 3p.p with that/let-pres: 3p.p that the children play-pres.subj: 3p.p
'The parents make/let the children play'

The starting point is the hypothesis that the occurrence of two complement structures is motivated by conceptual considerations. Specifically, the conceptual differences between infinitival and finite complements of causative verbs correlate with the distinction between direct and indirect causation, according to Shibatani & Pardeshi (2002), i.e. *the same spatio-temporal profile* for the causing and the caused events (direct causation) and *distinct temporal profiles* (indirect causation). This distinction is prototypically manifested in *direct physical causation* vs. *mental inductive causation* (Kemmer & Verhagen 1994; Verhagen & Kemmer 1997). Also, the indirect causation iconically expressed by the finite complement construction frequently exhibits inferential features, i.e. the conceptualizer creates a causal relation that is not so easily detected in the outside world (Vesterinen 2010).

In the framework of Cognitive Grammar (Langacker 2008), the conceptual differences between infinitival and finite complements of causative verbs may further be explained by the notions of *grounding* and *subjectification*. The grounding of the finite complement creates a relation between the *ground* and the complement event: the complement event is conceptualized as an event on its own and designates a proposition about processes in the outside world. This leads to a higher degree of *subjectification* in the finite complement construction: it subsumes semantic attenuation and the shift in perspective from an active subject to the mental scanning of a subjectively construed conceptualizer.

We will test the correlation between direct causation and infinitival complement construction and indirect causation and finite complement causation trough a multifactorial corpus-based analysis. The linguistic material consists of 1,500 occurrences of the pattern causative verb + infinitival/finite complement extracted from three corpora: Internet sites corpus, newspapers corpus and oral corpus. We will manually encode the 1,500 examples for 15 factors or variables, namely finite/infinitival complement clause, (in)direct causation, transitivity and aspect of the subordinate verb, causer, causee, caused event, modifiers in the subordinate clause, register and European/Brazilian Portuguese. We will perform a logistic regression analysis. Taking the results of a pilot study, we expect that a highly significant correlation between (in)direct causation and infinitival/finite causation and between (in)direct causation and physical/mental-social caused event does exist. It will be not confirmed, however, the correlation between mental-social caused event and finite complement. Animate causer and animate causee will predict indirect causation with the verb *deixar* but not with the verb *fazer.* The most unexpected result concerns the variable (in)definite causee: indefinite causee predicts indirect causation with *deixar* but, with *fazer,* indirect causation is predicted by definite causee; indefinite causee predicts finite complement with *fazer* but when it comes to *deixar,* finite complement is predicted by definite causee.

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Negative Social Emotions from a Comparative Perspective. A usage-based approach

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Background

The present study investigates the concept of SHAME from a cross-linguistic and cross-cultural perspective. This concept, overarching the field of negative self-evaluative emotions, is operationalized through four lemmas realizing it: 'shame', 'embarrassment', 'humiliation' and 'guilt'. They are analyzed in their most frequent lexical instantiations, as used in three communities of British English, American English and Polish. The study has two goals, one descriptive, the other methodological. Firstly, it aims to identify the conceptual structuring of the four categories relative to their respective socio-cultural contexts. The result will be three sets of culture-sensitive usage tendencies. Secondly, the study further advances corpus-driven quantitative methodology for the description of intersubjectively-grounded abstract concepts (Krawczak 2014).

With respect to the descriptive dimension of the study, two sets of hypotheses are formulated, one pertaining to the lexical structuring, the other concerning cross-cultural divergences. With regard to the former set, it is expected that there will emerge a continuum from 'embarrassment' through 'humiliation', 'shame' to 'guilt' relative to the gravity of the cause and its temporal frame. As for the cultural dimension, the ideas of individualism and collectivism (Triandis 1995) are hypothesized to affect the way in which SHAME emotions are conceptualized and externalized. Accordingly, in the Anglo-Saxon world, whose members are relatively more independent, such emotions are more likely to be experienced as a result of one's own actions and regardless of the presence of audience. In the comparatively more interdependent society of Poland, by contrast, negative self-evaluation and the resultant emotions, will more commonly arise due to other people's deeds and in the presence of witnesses.

To test the above hypotheses and to identify the culture-specific construals of the lexical categories, the study employs usage-based methodology. More specifically, the method used can be termed configurational (Geeraerts *et al.* 1994), profile-based (Gries 2003) or multifactorial usage-feature (Glynn 2009) analysis. The method permits the identification of frequency-based patterns of language use, taken to be indicative of conceptual and cultural tendencies in profiling reality. The data were extracted from online diaries/blogs, rich in spontaneous and near-dialogic language use, which is particularly important in the study of intersubjectively-constructed concepts such as SHAME. Equal numbers of the most frequent lexical instantiations of the lemmas for the three communities were taken, amounting to 1000 contextualized observations. The data were manually analyzed for a range of usage-characteristics, including: cause, temporal scope of the cause, emotion type, audience, emotion status, intentionality. Next, statistical modeling was applied in the form of exploratory (correspondence analysis) and confirmatory (logistic regression analysis) techniques. This produced verifiable language- and culture-specific profiles for the four lemmas under investigation.

The results provide partial quantitative support for the hypotheses put forward relative to the conceptual and cultural dimensions. Among the unexpected patterns of use is the approximation in usage between the Polish exponents of 'shame' and 'embarrassment', both of which emerge as based in the immediate interactive situation. Another unanticipated positive correlation in usage is revealed for the instantiations of 'shame' and guilt' in British and American English, both of which are related to the same serious, morally-grounded, causes.

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Phonetic evidence for parts of speech in Russian

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Background

This paper builds on two major claims of cognitive linguistics: 1) the system of parts of speech is semantically definable (Langacker 2008: 108), 2) differences in meaning of linguistic items are reflected as differences in form (Kemmer 2010). Since the distinction between nouns and verbs is one of the basic distinctions in the typology of parts of speech (cf. Beck 2002: 4), we expect to find differences that will signal to a native speaker whether they encounter a noun or a verb.

However, while it is well known that nouns and verbs may have different phonological behavior in a language (see Myers 2002, Bobaljik 2008, Smith 2011), few studies have addressed phonetic differences between parts of speech. There is only one study that I am aware of, Hollmann 2013, where phonetic difference between parts of speech is captured in an experiment. Hollmann asked native speakers of English to produce nonce nouns and verbs and discovered that such nouns and verbs differed in word length, the presence of nasal consonants, the presence of a final obstruent, final obstruent voicing, and frontness of the stressed vowel.

The present study investigates whether phonetic cues can be used to distinguish existing nouns and verbs in Russian. The paper reports the results of an experiment in which ten native speakers of Russian were asked to pronounce sixteen words. All words have similar phonological structure: they are monosyllabic, the syllable onset contains a sibilant /s/ and a stop, followed by a vowel and a one-consonant coda. Eleven of the words are nouns (e.g. *stol* 'table-NOM.SG'), and five are verbs (e.g. *styl 'cool.down-PAST.MASC.SG'*). In addition to difference in part of speech, the experiment tested the influence of other potentially important factors: words differ in their morphological structure – some words contain a morphological boundary and some do not, and in different sentences target words are positioned differently in relation to prosodic boundaries. Overall the experiment contained 64 sentences and each speaker repeated each sentence 5 times.

The paper demonstrates that the part of speech significantly affects the duration of the first sound of the word and also the duration of the vowel that follows the initial cluster. Part of speech serves as one of the predictors in the ANOVA model in combination with other predictors: subject, prosodic domain, presence of a morphological boundary, part of speech and word frequency. The fact that we are able to find phonetic difference between nouns and verbs indicates that this distinction is not purely theoretical and that native speakers of a language also have direct access to this information in the phonetic form of a word.

This paper provides evidence that the semantically driven parts of speech distinction affects phonetic duration of sounds. We see that noun and verb super-schemas proposed by Langacker may be extracted from phonetic information. When we hear the onset sibilant of one of these Russian words we can already guess whether it will be a noun or a verb.

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Beyond raw frequency: the grammaticalization of Afrikaans *gaan*

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Background

The process of grammaticalization contributes important insights relevant to usage-based theories of language and how language use contributes to language change. In research on grammaticalization, the importance of studying usage patterns and frequency is widely accepted. A significant rise in frequency of a grammaticalizing construction is often depicted as an important part of the grammaticalization process (Bybee, 1998; Hopper & Truagott, 2003), although high frequency is not a prerequisite for grammaticalization (Mair, 2004). However, Mair (2004) claims that we do not yet fully understand the role of frequency in grammaticalization.

Afrikaans, an extra-territorial daughter language of seventeenth century Dutch, inherited many characteristics from Dutch, one of which is the frequent use of the partially grammaticalized verb *gaan* ("to go"), including reference to the future. When investigating corpus evidence of the use of *gaan* since the standardization of Afrikaans (early twentieth century), it seems at first that there are no significant changes underway – the overall frequency of *gaan* remains fairly stable. However, when one looks closer at the use of the other future tense auxiliary verb *sal* ("shall"), it shows a non-negligible decrease. Assuming that future tense reference as such is not declining, this could point to more subtle changes in the grammatical constructions used for expression of temporal reference to the future.

The research questions that follow from the above is:

1. What does a more detailed syntactic and semantic analysis of the use of *gaan* in Afrikaans reveal about its ongoing grammaticalization?
2. What are the implications of these changes for the relationship between frequency and grammaticalization?

A detailed syntactic and semantic analysis of the use of *gaan* shows that there are several different possible uses of *gaan*, and that although its raw frequency remains fairly stable, certain meanings (more lexical) are declining, making way for other (more grammatical) uses. A further analysis of the use of *sal* on the one hand, and other verbs of movement might show a more comprehensive picture of the interrelated changes.

The method used is called short-term diachronic comparative corpus linguistics (see Leech *et al,* 2010). The corpus consists of excerpts from Afrikaans texts, grouped into four periods: 1911-1920, 1941-1950, 1971-1980 and 2001-2010, representing a century of written Afrikaans since initial standardization. The word count for each period is approximately 261 000 words, with equal portions from a variety of genres. Although it is a small corpus in comparison to that available for resource-rich languages like English, it is the only one of its kind available for Afrikaans, and contains enough instances of *gaan* for satisfactory analysis.

The preliminary conclusion is that frequency increase is not a prerequisite for grammaticalization, although it is often an indicator. This study illustrates the importance of more detailed functional analyses to complement overall patterns in frequency, as well as an awareness of other interconnected changes, for a better understanding of the role of frequency in the process of grammaticalization.

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The usage-based cognitive model of ANGER. A multifactorial usage-feature analysis

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This study takes the lexical field of ANGER in English as an operationalisation of the linguistic structuring of the concept (Wierzbicka 1985). It applies multifactorial usage-feature analysis / profile-based analysis (Geeraerts *et al*. 1994; Gries 2003) to the contextualised use of four ANGER lexemes. The aim is to compare the results of this lexeme-observation approach with a lexeme-elicitation approach in social psychology termed semantic-profile analysis (Fontaine *et al.* 2014.)

The concept of ANGER has a central place in the Cognitive Linguistic study of concepts using the analytical construct of Idealised Cognitive Models (Kövecses 1986; Lakoff 1987). However, ICM analysis faces two limitations. Firstly, it produces results that cannot be falsified and secondly, it treats language and culture as a single 'idealised' whole, with no internal variation in its structure. The first limitation represents a basic flaw in terms of scientific adequacy, while the second limitation is at odds with the usage-based model of language to which Cognitive Linguistics ascribes. This study argues that Idealised Cognitive Models are valid theoretical models of language structure and that Cognitive Linguistics must develop empirical methods for testing them. Inroads have been made using elicitation and experimentation methodologies, responding to the first of these limitations. However, neither of these methods offers information about social variation. Observational methods, in the form of electronic corpora, are ideal for identifying these social dimensions of conceptual structure.

The data consist of 800 contextualised occurrences of the lexemes *angry*, *annoyed*, *mad*, and *pissed off*, taken from the LiveJournal Corpus (Speelman 2005) evenly distributed in both British and American English. Drawing on component based psychological studies into conceptual structure (Fontaine *et al.* 2014.), the ANGER event scene is divided into different participants. The role in and effect of the event upon each of these participants is analysed and annotated for each occurrence. The annotation / manual analysis of the usage-features totals 28 variables, or conceptual-linguistic dimensions.

The results of the annotation / usage-feature analysis are subjected to multivariate statistical analysis. This permits: (i) the identification of usage patterns, held to be the 'internal' structuring of the concept; (ii) the calculation of the statistical significance of those patterns; (iii) the modelling of those patterns in order to determine the explanatory accuracy of the analysis. Three statistical techniques are employed. Multiple Correspondence analysis is used to identify multidimensional patterns that form the basis of the investigation. *K*-means cluster analysis is applied to the output of the multiple correspondence analysis to verify underlining structures in the data. This will allow direct comparison with the results of the principle components analysis used in Fontaine *et al.* (2014). The results show that although the *anger-irritation* distinction, identified in the elicitation-based Semantic Profile Analysis, is important, a further distinct dimension to the structure of the concept is revealed. Certain lexemes, such as *mad* and *pissed off*, correlate with an ANGER event, which is restricted to Agents who are socially or emotionally close to the Patient, but who have not violated any norms. A range of semantic features is shown to be distinctly associated with this third basic conceptual pattern.

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The importance of being animate: quantitative asymmetry in Russian case paradigms

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Cognitive linguistics postulates that parts of speech are semantically motivated (Langacker 1987). In the present paper we provide quantitative support for this claim using grammatical profiles - distributions of inflected forms in a corpus. This method has been used to analyze different subclasses within a single part of speech (Janda & Lyashevskaya 2011, Eckhoff et al. 2014). We extend the method of grammatical profiling to categorize different parts of speech. Before we can address cases where part of speech attribution is problematic, we need to test whether the method offers reliable results in more obvious cases. In this paper we investigate Russian nouns and pronouns since they provide good testing grounds for the proposed methodology: while sharing their syntactic functions, they form two clearly distinct classes. We demonstrate that these two parts of speech have different grammatical profiles, and that their profiles are strongly motivated by the semantic category of animacy. Our study further suggests that it is possible to use grammatical profiling of a word in order to determine its part of speech.

We apply grammatical profiling to a sample of 89,402 noun phrases culled from the modern (1950-present) subcorpus of the oral part of the Russian National Corpus (www.ruscorpora.ru). Following the methodology proposed by Makarova & Say (2007), we tagged the sample for: phrase head (noun or pronoun), case, number, gender, animacy, person (for pronouns) and syntactic role. We find that the uneven distribution of nouns and pronouns across paradigm cells is non-random (χ^2 = 5042.564, df = 5, p-value < 2.2e-16, Cramer's V = 0.24):

Case	Pronouns		Nouns	
Nominative	**17786**	**61%**	**24346**	**40%**
Genitive	3617	12%	12861	21%
Dative	**2613**	**9%**	**2863**	**5%**
Accusative	3564	12%	10325	17%
Instrumental	901	3%	3352	6%
Locative	868	3%	6176	10%

Table 1. The distribution of pronouns and nouns: all types of texts.

Table 1 demonstrates that Nominative and Dative (boldfaced in the table) use a higher proportion of pronouns than nouns, while other cases demonstrate the opposite tendency. We argue that such distribution can be explained by the interaction of case semantics and the animacy hierarchy. Nominative and Dative frequently encode such semantic roles as agent, recipient and experiencer, and hence tend to attract animates. We further explore the distribution of pronouns by person and demonstrate that the percentages of Nominatives and Datives follow Silverstein's (1976) hierarchy and form a scale "1 person > 2 person > 3 person", while other cases show the opposite pattern "1 person < 2 person < 3 person". A comparison of animate and inanimate nouns reveals similar tendencies: animate nouns are attracted to Nominatives and Datives, while inanimate nouns show preference for other cases.

We show that nouns and pronouns differ in their grammatical profiles. The distribution of inflections is not random, but semantically motivated: animacy - a category of a purely semantic nature - determines quantitative distribution of nominal inflections. Our quantitative analysis empirically supports the semantic motivation behind parts of speech.

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Cognitive Perspectives on Linguistic Taboo

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Background

The very nature of linguistic taboo is problematic for linguistic research. Many decades ago, the Spanish philologist, Dámaso Alonso (1964), criticised the abstention *pudoris causa* that affected the study of taboo words. The few voices in the history of linguistics that tackled tabooed semantic fields (sexuality, secretions, death, diseases, disabilities, etc.) arrived to a number of conclusions, two of them of notable importance: **1) Linguistic taboo is socially determined**: its extreme variability, both semantic and lexical, is deeply enrooted in each particular culture (Casas Gómez, 1986: 41; Crespo Fernández, 2007: 35; Galli de Paratesi, 1964: 21; Jay, 2009: 154; Montero Cartelle, 1981: 31; Senabre, 1971: 176; Uría Varela, 1997: 8). **2) Linguistic taboo has important cognitive functions**: its use has various effects, from the strict point of view of the speaker (Allan and Burridge, 2006: 42; Andersson and Trudgill, 1992: 53; Jay, 2000: 16), but also from an interactional perspective (Allan and Burridge, 1991).

In recent years, a number of scholars have dealt with the phenomenon of taboo underlining the unbreakable bond of the social and the cognitive facets just mentioned (Casas Gómez, 2009; Crespo Fernández, 2008; Chamizo Domínguez, 2004, 2009; Jay, 2009). This has led, on the one hand, to **a renewed interest in defining and theorizing about the domain's core concepts** (interdiction, taboo, euphemism, dysphemism, etc.) according to a maximalist theory of meaning, such as that developed by Cognitive Linguistics (Cuyckens et al., 2009; Geeraerts, 2006). On the other hand, it has called for **new methods and data** for analysing this always-problematic subject. For these reasons, this session embodies the aim of this year's ICLC conference of **"bringing together theory and method"** through one of the most revealing phenomena in linguistics.

The panel gathers scholars that reflect on a **new, non-essentialist theoretical framework for linguistic taboo** and related phenomena from a wide range of specialities including historical semantics, philosophy of language, corpus linguistics, cognitive sociolinguistics and neurolinguistics, promising a highly interdisciplinary approach to an intrinsically complex linguistic reality. Through linguistic taboo (referential and non-referential), the contributors reflect on some core questions of Linguistics, such as the functions of Language, and particularly, its relationship with feelings (Finklestein); the history of tabooed, lexical and semantic fields and its relation with cultural and social models (Ruette); the cultural conceptualizations underlying naming practices (Benczes et al.); the role of categorisation in the creation of discursive identities and stances (Pizarro Pedraza); and the need of linguistic ambiguity in the expression of euphemistic language, such as politically correct language (Chamizo Domínguez).

Moreover, the papers support their theoretical reflections with **empirical analyses of different taboo phenomena** (swearing, reference to taboo concepts, coprolalia, political correctness) **and topics** (ageing, diseases, sexuality, etc.), **through multimodal data** (video interviews, audio interviews, corpus data – historical, synchronic) **in three different languages** (English, Spanish and Dutch).

Contributors

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Tom Ruette. QLVL, Katholieke Universiteit Leuven. Bad language in Twitter: a socio-cognitive look on swearing with diseases in Dutch.

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Andrea Pizarro Pedraza. QLVL, Katholieke Universiteit Leuven. Taking stance towards sexual taboo through semantic variation.

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From explicit prohibition to ambiguity in prohibiting

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Background

This contribution will deal with two topics closely related and intermingled. I firstly will try to show how one of the salient features of euphemisms is their ambiguity to the extent that even sentences in which lexicalised euphemisms are used can become dysphemistic if they are not ambiguous. This is the case of a well-known excerpt from Somerset Maugham in which, in spite of the fact that all the nouns used are euphemisms, the excerpt itself can be considered dysphemistic. Conversely, I will show two instances from two songs in which female pudenda are euphemistically and ambiguously alluded to. Secondly, I will try to apply my previous reflections to politically correct language. In order to do so I will take as a starting point the fact that political correctness spread across the western countries in the same decade (1960-1970) in which the motto «Il est interdit d'interdire» got also trendy. As a result of the fact that the noun 'prohibition' (and its cognates, derivatives and synonyms) became '"prohibited" as a politically incorrect word, prohibition itself has to be phrased in ambiguous sentences. For instance, instead of the (currently) politically incorrect notice "No Smoking" or "Smoking is prohibited", we frequently find the politically correct one "Thank you for not smoking", where the sentence meaning is pretty different from what the author of the sentence tries to mean; since the sentence meaning is that someone thanks you for not smoking, while what the author of the sentence tries to mean is that smoking is prohibited.

Key words:
Political (in)correctness, euphemism, dysphemism, ambiguity, censorship/prohibition.

Bad language in Twitter: a socio-cognitive look on swearing with diseases in Dutch

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Background

Research question: To what extent do cultural and social factors overlap as drivers for the choice of the DISEASE source domain in Dutch 'bad language'?

Background: Speakers of Dutch can draw from the DISEASE source domain to express emotions via expletives, e.g. Dat is een vreselijke kankeropmerking 'That is a horrible cancer-remark', in which kanker ‘cancer’ is not used to refer to the topic of the remark, but to underline the awfulness of the remark. Although DISEASE-based expletives can also be found in Yiddish and Polish, and also in most European languages up to the 17th century, the use of DISEASES for swearing has been attributed to the Calvinistic cultural background of the Dutch (Van Sterkenburg, 2001). The rationale is that the predestination theory in Calvinism—which predicts that any disease you have is a punishment of God because you were a bad person—puts diseases under a spell of taboo, and taboo domains are a common inspiration for bad language. We want to investigate the Calvinism-hypothesis empirically and quantitatively, by leveraging the existence of a well-known cultural border that divides the Calvinistic North of the Netherlands from the Catholic South of the Netherlands and Flanders (the Dutch speaking part of Belgium).

Data: We collected tweets from Twitter users that link to a specific location in their Twitter profile, and searched for uses of it in an expletive context. To provide an onomasiological perspective, we also included expletives from other source domains in our search (i.e. RELIGION, EXCREMENTS, GENITALS, SEXUAL). After manual scrutiny of more than 70.000 tweets, we retained a large dataset of several thousands of tweets that contain expletives. To defend our use of a contemporary data source to investigate a potentially historical pattern, we rely on the conservation principle of language (Geeraerts et al. 1995).

Analytic methods: Whereas the annotation of the tweets has been a very time-consuming qualitative stage of the research, we apply quantitative methods, i.e. geo-spatial statistical techniques (Local and Global Spatial Autocorrelation, Grieve et al. 2011) and visualization techniques, to obtain answers for the research question.

Preliminary results: The geographical division of tweets that contain DISEASE expletives versus tweets that do not contain this kind of expletives is expected to mirror the cultural (and historical) boundary of Calvinism, which follows the trajectory of two main rivers in The Netherlands. However, the data show very strongly that DISEASE-based swearing is a phenomenon that is largely restricted to the area inside the four main central cities of The Netherlands, known as "Randstad" 'Rim City'. It is unclear how this pattern should be interpreted. One explanation could be that the social factor 'urbanity' trumps (or interacts with?) the cultural-historical factor of Calvinism.

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Ageing and cognitive linguistics: What naming practices can reveal about underlying cultural conceptualisations

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In 1994, Alexandre Kalache was appointed as Director of the World Health Organization's Health of the Elderly program. His very first act was to change the name of the department to "Ageing and Life Course Programme". Kalache was convinced that the label *elderly* carried negative undertones, as it "put a segment of the population in a box" (May 2012: 9). *Ageing*, however, seemed a more appropriate term because – in Kalache's view – it felt more "active" and included the whole society (ibid.). This simple act of name change casts the spotlight on the commonplace observation that euphemisms have a rather short lifespan, as the name – over time – "tarnishes" the concept and new euphemisms need to be constantly generated.

One of the most evolving areas of euphemisms in present-day society is ageing (Allan and Burridge 1991). As Kalache (2012) explains, baby boomers are now reaching retirement age, and wish to remain active and productive for many more decades – thereby redefining the concept of ageing considerably. Following Kalache's claims, our main hypothesis is that ageing is currently undergoing a major reconceptualization, and that this process can be best analysed within a cognitive linguistic framework of the euphemistic (figurative) words and expressions used in connection to ageing. Cognitive linguistics has been especially successful in the description and analysis of cultural conceptualisations (Sharifian 2011) and figurative language use (Benczes 2006a), including euphemisms (Benczes 2006b). We will present the first results of a large-scale research project on the conceptualization of ageing in Australian English, funded by the Australian Research Council. One of the major aims of the research is to explore the conceptual metaphors and cultural schemas of ageing (such as SUCCESS IN AGEING IS INDEPENDENCE), as well as the cultural categorisations of ageing (who is *old*, *elderly*, *senior*, etc.). As part of this project, we investigated the naming practices of aged care facilities in Melbourne, Australia. Although such an analysis seems to be an obvious choice in order to better understand the process of linguistic – and hence conceptual – change surrounding a taboo subject such as ageing, very little has been done within this field on both the international and the Australian level.

By comparing the naming strategies of 2013 with those of 1987, we have found that the 2013 sample showed a much greater degree of euphemistic usage as compared to the 1987 data, by using a wider array and a larger proportion of appealing names. Regarding the 2013 sample, there was a wide selection of names typically revolving around either the FAMILY metaphor, which conceptualized the facility as an upper-class family home, as in the case of *manor*, *hall*, or *gardens*, or the VACATION metaphor, which viewed the facility as a holiday resort, as in the case of *lodge*, *view*, or *villa*. These two conceptualizations cater to essentially two different needs or requirements when it comes to an aged care facility. The FAMILY metaphor emphasizes community and permanence, while the VACATION metaphor stresses individuality and transience.

These findings seem to corroborate the idea of "successful ageing", as first introduced in 1987 by Rowe and Kahn: the naming practices of the 2013 data have generally placed the negative associations of old age (such as decrepitude, dependence and loneliness) into the background by focusing on the traits that are associated with successful ageing – such as emotional well-being, active lifestyle, and social and community involvement. In a youth-oriented culture that eschews direct reference to death and the dying process, it is not surprising to see that its aged care facilities tune down (perhaps even obliviate) the negative characteristics of ageing with their strong hints of retirement, lifestyle choices, friendships, leisure and the like.

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Taking stance towards sexual taboo through semantic variation

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Background

Background and research question: In the last years, a number of scholars have underlined the social and cognitive nature of linguistic taboo phenomena (Casas Gómez, 2009; Crespo Fernández, 2008; Chamizo Domínguez, 2009). The definition of linguistic taboo, the delimitation of the tabooed areas and the rules that determine how speakers should behave towards them in discourse, are highly dependent on linguistic ideologies entrenched in each particular society. In that sense, the utterance of a linguistic taboo concept and its particular linguistic expression imply a decision on how to behave towards those rules on the part of the speaker. For instance, in the context of the prolife vs. prochoice debate, Lakoff (1996) argues that the semantic construal of a concept such as 'abortion' depends on the speaker's stance towards abortion itself (also Janicki, 2006). It would be important to know whether the expression of other taboo concepts will also have a social or cultural grounding. More precisely: how does the stance towards linguistic taboo influence the actual semantic choices of the speakers when expressing a sexual concept? Based on previous studies (Pizarro Pedraza, 2015) we will test the hypothesis that the micro-social discursive variable 'stance' has a strong influence on semantic variation, and we will test its interaction with macro-social and conceptual variables.

Data: We work with our own corpus of 54 face-to-face interviews in Spanish, designed for the indirect elicitation of sexual concepts. It was collected in two districts of Madrid, controlling for the social information of the speakers. Moreover, it is also annotated for micro-social variables, such as the speakers' stance towards talking about sex, among others.

Analytic methods: Building on Cognitive Sociolinguistics (Geeraerts et al. 2010; Geeraerts & Kristiansen, 2014; Kristiansen & Dirven 2008) and Third Wave Sociolinguistics (Eckert 2005, 2010), we work with mixed methods, including qualitative and quantitative techniques. Due to the nature of our data, the first phase of our analysis is based on the manual extraction and coding of the sexual expressions according to the semantic analysis of each token and to the stance of the speakers towards taboo, based on their answers to the interview. After the automatic coding of the rest of the variables (gender, age, education, etc.), we will analyse quantitatively their effect on the construal of sexual concepts.

Preliminary results: An initial analysis shows that speakers who present themselves as "not embarrassed" towards linguistic taboos have similar semantic behaviours (preference for direct construal) versus speakers who manifest certain "embarrassment", which seems to prove that their stance towards linguistic taboo is also coherently performed through their semantic choices.

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Language for Feeling: Lessons from Tourette Syndrome

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Background

Modern linguists and philosophers of language have studied and discussed the relations between thought and language. Language—external or internal—serves in the very process of forming concepts and thought[1]. When external, words are the transmitters of thoughts to the hearer, used by speaker and hearer to construct a common cognitive domain[2].

Words do not serve these functions as well for feelings. Words express the *concept* of feelings, not the *experience* of feelings[3]. When they evoke empathy in the hearer, it is in a much lower intensity than that of the speaker. For most of us, who are not poets, language is a poor medium for feelings. An important exception is swearing. Swearing has the power to express, evoke, and sometimes even relieve pain, anger, and frustration[4]. It can be used for social protest but can also serve for in-group bonding. It can evoke humor and can satisfy the lure of the forbidden[5].

Research Question My study seeks to further understand swearing as situated and embodied phenomenon.

My "natural laboratory" is the involuntary swearing in Tourette syndrome (TS). TS is a neuropsychiatric disorder in which some of the inflicted suffer from involuntary swearing – *coprolalia*[6]. I tested the hypothesis that coprolalia, despite being involuntary, is sensitive to cultural taboos and to the specific situation. The uncontrolled utterances of coprolalia vary among cultures but always violate the cultural taboos of the swearer. Moreover, these utterances are often relevant to the specific social situation, maximizing the violation and the social penalty to the swearer[7].

Hypotheses (i) Coprolalia, even though involuntary, is fine-tuned to achieve the desired emotional impact. (ii) The swear utterance is situated in the swearer's culture and in the specific social situation. (iii) The act of swearing is an embodied phenomenon.

Data and Methods I conducted interviews with 16 TS adults, two underwent the neurosurgical procedure of deep brain stimulation (DBS). My data include: (i) self-observations of the interviewees; (ii) analyses of their reported coprolalia; and (iii) analyses of their coprolalia demonstrated during the interviews. For two interviewees, I compared their coprolalia before and after their DBS, with information about the neurophysiological targets of the procedure.

Preliminary Results The data support the hypotheses: (i) The assumed emotional impact on the hearer triggers the speaker's coprolalia. (ii) The semantics of the coprolalia is sensitive to the specific social event. (iii) Coprolalia is embodied: the cortico-striato-thalamocortical (CSTC) circuits play a role in it[8].

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Cognitive Pragmatic Aspects of Information Structure and Information Flow

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Background

This theme session addresses the cognitive pragmatic aspect of Information Structure and Information Flow, which we expect to attract researchers applying various approaches to the cognitive and pragmatic aspects of Information Structure and Information Flow, including the approaches developed by Wallace L. Chafe, František Daneš, Jan Firbas, Eva Hajičová and Petr Sgall, Janet K. Gundel, Michael A. K. Halliday, Knud Lambrecht, Ellen F. Prince, and Enric Vallduví, among others. The session is expected to appeal to scholars in the subfields of pragmatics, text linguistics/discourse analysis, corpus linguistics and specialized language.

Since the pioneering contributions of Vilém Mathesius (e.g. 1929) and other Prague School scholars, the study of Information Structure has generally been considered an inseparable part of research into language communication. Representing a concept which goes beyond the bounds of a sentence (clause) structure, it is not surprising that this topic has been considered a promising area of study even for cognitive linguists, as suggested for example by Sperber-Wilson (1995). Nevertheless, the latest contributions to the field of Cognitive Linguistics, as evidenced for example in Croft-Cruse (2004) or Geeraerts-Cuyckens (2007), seem to have left the topic largely untouched. Therefore, we hope that the theme session will (re-)establish the connection between the study of information structure and cognitive-pragmatic aspects of language communication.

Contributors

Gertraud Fenk-Oczlon. Universität Klagenfurt. Frequency and the constant flow of linguistic Information.
Anna Morbiato. Università Ca' Foscari Venezia. Cognitive-functional principles shaping linear order in Chinese: a new perspective.
Jana Chamonikolasová. Masaryk University. The role of linear modification in information structure.
Jianhua Chen. Beijing Union University. On the Two Perspectives in Mathesius's Study of Subject-Verb Relation.
Jun Qian. Peking University. On the Two Perspectives in Mathesius's Study of Subject-Verb Relation.
Lenka Stehlíková. Masaryk University. Contextual Disengagement in the FSP Theory.
Pavel Ozerov. La Trobe University. DSM in Burmese: structuring information of and beyond a proposition.
Alice Rubášová. Masaryk University. Information flow of legislative sentences from the viewpoint of a cognitive 2-move structure.
Arie Verhagen. Leiden University. Discussion.

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Frequency and the constant flow of linguistic information

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Background

Relative frequency – overall token frequency as well as relative frequency within specific contexts – affects first of all cognitive processes. Higher frequency of use results in higher familiarity, higher accessibility or higher availability, and thus also in lower cognitive costs of speech production and perception [1]. These cognitive mechanisms on their part influence linguistic variables such as length of morphological forms and even word order: More frequently units (i) tend to be shorter [2, 3] and (ii) to be placed before less frequently used units. In a first step I shall present previous empirical results [4, 5, 6] concerning particularly the rule "more frequent before less frequent". I will then argue – based on information theoretic considerations – that both the rules (i) and (ii) contribute to a rather even distribution of information over time:

(i) In information theory high relative frequency is related to low informational content. An element carrying a smaller amount of information can be processed within a shorter time. This means: Less time or less structural complexity for communicating less information. The proportionality function between information content and length of units provides an economic flow of linguistic information [7].

(ii) As a sentence or a clause continues, the remaining words get more and more predictable – the number of possible and plausible continuations decreases, and so does the (subjective) information. To place informationally rich elements in a position, which is per se characterized by high information, would produce peaks of cognitive overload. An appropriate strategy to avoid such peaks is the tendency to begin a sentence or a clause with those words having a higher predictability in this context. For instance with (groups of) words referring to (groups of) words of the preceding sentence, and with terms coding concepts activated by this preceding sentence. This tendency would explain, among others, the rule "old before new", or "topic before comment".

Similarities between the Constant Information Flow hypothesis and Jaeger's [8] Uniform Information Density model, which also predicts an even distribution of linguistic information over time, will be discussed.

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Cognitive-functional principles shaping linear order in Chinese: a new perspective

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Background

Chinese is an isolating language relying heavily on word order (WO) to encode linguistic information; moreover, discourse factors (i.e. information flow) and cognitive aspects also greatly influence linear order. Thus, Chinese WO has a high functional load, in that it alone encodes several linguistic functions and is determined by a complex interplay of different principles and factors. The cognitive-functional approach has proved to be a valid research framework for investigating Chinese WO: Li and Thompson (1976,1981) and other functional linguists devoted considerable attention to discourse aspects, such as the topic-comment dichotomy, accounting for several peculiar WO-related phenomena. Moreover, Tai (1985,1993), highlighted Chinese iconic nature, its structures being determined by cognitive principles, such as those of Temporal Sequence, Temporal Scope, Whole Before Part etc. It was in the light of the research line of the Prague School, that research on Chinese WO functional and cognitive principles begun.

This presentation aims at presenting some of the most relevant findings of research on cognitive-functional principles shaping linear order in Chinese under a new perspective, in order to highlight their effectiveness in describing WO related phenomena, with respect to (1) recent findings in research on iconicity of syntax, information sequencing and sentence processing, and (2) examples of effective application of such principles on the description of Chinese structures and on SLA, such as the work of Jiang (2009) and Loar (2011). Finally, attention will be drawn to the notion of "scope", which characterises aspects both on the discourse and on the cognitive level (i.e. topic scope vs. temporal and spatial scope), therefore representing a potentially interesting research focus connecting WO cognitive and discourse factors.

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The role of linear modification in information structure

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Background

The concept of *linear modification* was introduced into linguistic theory by Bolinger (1952: 1125), who claimed that in presenting ideas in language communication, "gradation of position creates gradation of meaning when there are no interfering factors". Within One of the current theories of information structure (information packaging), the theory of Functional Sentence Perspective (see Firbas 1992), *gradation of meaning* is interpreted as gradation of information value or gradation of communicative importance (dynamism); and *linear modification* is considered one of the key factors determining information structure (see Chamonikolasová 2009). Presenting ideas in accordance with linear modification (starting with given, context-dependent, or accessible facts and ending with new, context-independent, dynamic ideas) reflects processes that take place in the minds of the communication participants and their perception of the extra-linguistic reality. Linear word order is considered to be the most natural order in Indo-European languages; it is referred to by Mathesius (1975: 83–4) as *objective*, and it is contrasted with the *subjective* order, which violates linear modification.

The present paper denotes the role of linear modification within the system of word order principles in different languages and its position within the system of factors of Functional Sentence Perspective. It examines the general tendency of speakers and writers to present ideas in accordance with linear modification and it outlines the conditions under which this tendency does not assert itself. The violation of linear modification is caused by interfering factors; in certain situations, however, linear modification asserts itself despite the presence of interfering factors. These examples illustrate the strength of the principle of linear modification in expressing ideas (see Chamonikolasová 2004)

The paper examines how differently structured utterances are perceived by recipients. It investigates whether texts consisting of sentences displaying linear modification are more easily processed by readers than texts containing sentences that violate linear modification. A survey among a group of respondents attempts to verify the hypothesis that linearity in presenting ideas facilitates perception and cognition. The respondents were asked to read two types of texts (linear and non-linear) and to carry out certain tasks, e.g. to summarize the texts, to retell them after a certain period of time, or to eliminate language units that are not decisive for the interpretation of the meaning of the text. The criteria taken into consideration in testing the hypothesis are the respondents' speed and precision of comprehension and their evaluation of the degree of intelligibility and reader-friendliness of differently structured texts. The results of the initial stage of this research seem to support the hypothesis; however, some data are ambiguous. Further tests will be conducted before a final conclusion is drawn from the experiment.

Key words:
word order, information structure, functional sentence perspective, linear modification, communicative dynamism, context dependence, information packaging

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Two Perspectives in Mathesius's Study of Subject-Verb Relation

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Background

Although subject is a syntactic concept, in Mathesius's linguistic characterology on English (1975), the research into the subject-verb relation is found both in the Functional Onomatology and the Functional Syntax. By making a thorough study and a comparison of the parts concerning verb, subject and object in Mathesius's research, the present paper argues that his approach to subject-verb relation is a two-way one, i.e. from the angle of verb and from the angle of subject. The former is more concerned with the argument structure while the latter the information structure. Under the heading of categorical transition of verb in Functional Onomatology, by giving the scale of performing-experiencing-suffering, Mathesius reveals to us that when a nominal expression occurs in the form of subject, besides its lexical meaning it may express some other meanings entailed by the different subject-verb relations, which a nominal expression in isolation lacks. In other words, the change of a verb's category may trigger a change of the subject-verb relation and at length a change of the pattern of the sentence or the different argument realizations of the same verb. This can be taken as the more static aspect of a sentence as a potential, while in the study of FSP Mathesius illustrates the more dynamic aspect of a sentence as an actualized utterance in discourse. The subject-verb relation at this point is explained by focusing on the subject's major function to express the theme of an utterance. In other words, by taking the form of subject a nominal expression can perform the function of introducing the base of a statement and impose on the finite verb the role of unfolding the development of message or the involvement of the participants introduced in the event. As such a change of the subject-verb relation here may entail a shift of the perspective adopted in an utterance and a different departure or starting point of message. Together with a detailed analysis of the various semantic relations between verb and object, Mathesuis here also shows that as the nucleus of an utterance providing new and unsettled information about the settled base, the subject-verb relation is more crystal. With various analyses of concrete examples concerning the subject-verb relation, this paper comes to the conclusion that Mathesuis's interpretation of the subject-verb relation in English is a duplex one. One takes the standpoint of verb and considers more of the argument structure, while the other takes the standpoint of subject and considers more of the information structure, which also reflects the difference between the sentence potential and the utterance actualized.

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Contextual Disengagement in the FSP Theory

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Background

Contextual disengagement is a phenomenon in the theory of Functional Sentence Perspective (FSP) which was identified by Firbas (especially 1995) and discussed by some other authors but so far, it has not been studied systematically.

In the process of communication, we constantly "*bring in irretrievable information and constantly change the immediately relevant context,*"… "*the moment a piece of information actually appears in the flow of communication, it becomes retrievable from it*" (Firbas, 1995: 18). Therefore, if the same information is subsequently expressed again, it becomes context dependent. However, there are cases when elements looking as context dependent at first sight are in fact context independent because they also bear some new information which cannot be retrieved from the context. See for example the following text:

> *We have to decide. We can either go by train to London or by coach to Manchester or fly to Edinburgh. Where would you like to go? — Let's* ***fly to Edinburgh****. We haven't been there for some time.* (Firbas, 1995: 22)

In this text, the second occurrence of "*fly to Edinburgh*" is retrievable from the context and so it should be context dependent. However, it also carries some new information, i.e. the information about the selection between the three options, and it is therefore contextually disengaged (or decontextualized).

In the proposed paper the phenomenon of contextual disengagement is studied in three texts belonging to three different registers – academic prose, fiction and spoken language. The research pursues several aims. Firstly, it examines the types of contextual disengagement. Firbas identified five types - **selection**, **contrast**, **identification**, **repetition** and **summarizing effect.** The analysis shows, however, that there are also other types than those identified by Firbas. Secondly, attention is paid to the formal means (morphological and syntactic) by which the phenomenon is realized, and to their different representation in different registers. Thirdly, an attempt is made to explain the principle of the phenomenon. It became apparent during the analysis that when disengagement occurs, there are usually two or more expressions involved, and the new information brought by the disengaged element represents some sort of relation between these expressions. In a considerable number of cases this new information corresponds to one of the so-called logical operators (conjunction, disjunction, implication, equivalence …) And last but not least, the paper discusses the frequency of contextual disengagement in the three registers and the differences between them in the representation of the individual types. The research shows that the phenomenon is most frequent in spoken language and least frequent in the academic prose. As far as the representation of individual types is concerned, in fiction and spoken language it is repetition which is most frequent while in the academic text, the most frequent types are selection, identification and linking (a new type).

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DSM in Burmese: structuring information of and beyond a proposition

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Background

Differential Subject Marking (DSM) in Burmese is usually analysed from the information structural perspective. Typical examples of this feature suggest that the opposition between an unmarked NP and an NP marked by *ká* SBJ corresponds to the expression of an established topic vs. a new/contrastive topic accordingly (e.g. Soe 1999:106–113). Additionally, *ká* SBJ is associated with the referentiality of the NP.

The present corpus-based study of DSM suggests that *ká* SBJ expresses a segregation of information into separate units (termed PACKAGES) and marks the relations between these units of information. Following Chafe (1994) and Jacobs (1999), it is argued that a PACKAGE constitutes a piece of information separately introduced into the discourse.

The range of topical and contrastive interpretations associated with *ká* SBJ is an outcome of the interaction of its PACKAGING function with the context. A stand-alone verb forms a coherent sentence in Burmese, if the context is established. Thus, separate pre-verbal units of information (PACKAGES) are often interpreted as context-establishing information and are consequently viewed as "new topics". They are similarly required in the case of a contextual ambiguity due to a competition of referents, namely in a contrastive environment (1), and obtain a contrastive interpretation as a result. Moreover, a separate portion of information implies the plausibility of its individual evaluation evoking referential readings. Yet, this is a plausible interpretation and not an inherent feature, as (2) shows.

PACKAGING has also discourse structuring and content managing effects. Initially located PACKAGES call for attention towards the relevant referent, making it become the current discourse topic and segregating the discourse into topic-oriented events. As a result, *ká*-marking does not follow the informational status of the relevant propositional topics. For example, the "new" topic in (3)(a) is unmarked, because the proposition is interpreted as a continuing part of the previous larger cumulative discourse event. Although the topic in (3)(b) is established, it is *ká*-marked because it initiates a new discourse event, as indicated by the marker *'then*'.

Finally, semantically heavy (e.g. long) constituents are preferably PACKAGED separately in any case (4).

Examples:

(1) *ʔəme-**ká*** *mə-la=tɔ́* *θà-**ká*** *pjã-pa-tɛ*
mother-**SBJ** NEG-come=SEQ son-**SBJ** return-POL-R
'The **mother**$_{SBJ}$ does not come (to her son) – so the **son**$_{SBJ}$ returns (to his mother).'

(2) *ʔə.tɕʰe.ʔə.ne* *kə̃u-ne-tɛ=ló* ***lu-tɔ-tɔ-mjà-mjà-ká*** *θõu.θaʔ-tɕá-pa-tɛ*
situation good-CONT-R=COMP **man-quite-RDP-many-RDP-SBJ** consider-PL-POL-R
'{**Relatively many people**}$_{SBJ}$ consider the situation good.'

(3) 'Then the donkey shook his head.'
(a) ***kʰwè=lɛ̀*** *po-pjì* *wṹ.nɛ̀-θwà-ta=pɔ́*
dog=ADD more-CSB be.sad-GO-R.NMLZ=RINF
'The **dog**$_{ø}$ became sadder.' ('The dog' is a new topic, but there is no marking by *ká* SBJ.)

(b) *da-n̥ḯ* ***kʰwè-ká*** *pjɔ̀-laiʔ-tɛ*
this-with **dog-SBJ** say-FOLLOW-R
'***Then*** the **dog**$_{SBJ}$ said.' ('The dog' is marked by *ká* SBJ although it is the established topic.)

(4) *tɕənɔ́-jouʔ-põu-ko=lɛ̀* ***ʔə-l̥á-sʰõu*** ***ʔə-tɔ-sʰõu***
1\D-look-picture-OBJ=ADD **NML-beautiful-SPR** **NML-skilful-SPR**
bədʑi-sʰəja-twe-ká *sʰwɛ̀-tʰà-tɛ*
painting-master-PL-SBJ draw-KEEP-R
'{**The best and most skilful artists**}$_{SBJ}$ paint my pictures.'

ADD – additive; COMP – complementiser; CSB – co-subordinate; POL – politeness; R – realis; RDP – reduplication; SEQ – sequentialiser; SPR – superlative

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Information flow of legislative sentences from the viewpoint of a cognitive 2-move structure

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Background

The communicative purpose of the language of law is clarity, unambiguity and precise interpretation. Authors of legal texts tend to enumerate all eventualities of a particular case within one sentence and keep the text condensed at the same time. This tendency results in complex and sometimes obscure sentence structures and leads to syntactic discontinuities and multiple interruptions of the information flow of legislative sentences. In this respect, the language of law represents an interesting genre for the study of the language means and cognitive efforts the authors of this genre involve in dealing with a contradiction lying in the essence of legal language. On the one hand, they introduce special terms to diminish a degree of vagueness inherent in natural languages and on the other hand, they introduce and develop versatile linguistic constructions for the precise interpretation of conceptualised legal terminology.

The aim of this paper is to apply to selected legal genres the interactive move-structure and cognitive structuring approach that Bhatia (1993) applies to parliamentary provisions. In his analyses of statutes, Bhatia demonstrates that legislative sentences can be formed into a 2-move structure, thus enabling the reader to understand the complexity of legal writing. According to Bhatia (1993:32) "the cognitive structuring displays a characteristic interplay of the main provisionary clause and the qualifications inserted into various syntactic openings within the structure of a sentence." These syntactic openings are in fact the points where the linearity of the legislative sentence is interrupted to allow the legislative drafter to specify the obligations, duties and other legal concepts embedded in legal terms. Unlike readers of non-specialised genres, particularly fiction, who mostly perceive long, complex sentences as an uninterrupted flow of information, readers of legal texts often face syntactic and information incoherence and have to pay special attention to syntax so as to avoid incorrect interpretation of the legal meaning. The proposed paper, adopting Bhatia's approach, presents a comparison of English and Czech sentence structures in parallel and comparable English and Czech legal texts and interprets the thought structuring methods applied by members of the English and Czech legal professional communities. For this purpose the author selected the types of legal documents that provide their authors with relative stylistic freedom - case law, judicial opinions and contracts.

The comparison of Czech and English sentence structures focuses on the extent to which individual legal writing is influenced by the constraints of the relevant language and the genre, and the extent to which a specialist writer can preserve his/her own style. The authors of selected documents, both Czech and English, seem to use similar ways to achieve the communicative purpose; therefore, it can be assumed that they employ similar cognitive processes, which is reflected in comparable sentence structures and linguistic constructions in otherwise rather different languages of different legal systems.

The comparison of parallel and comparable legal texts enables us to study the regularities and specificities of this genre at all levels: cross-cultural, textual, syntactic, lexical and morphological. "These regularities must be seen as cognitive in nature because they reflect the strategies that members of a particular discourse or professional community typically use in the construction and understanding of that genre to achieve specific communicative purposes." Bhatia (1993:21).

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Figurative language use: The case of irony in language, thought and culture

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Background

Among types of figurative language, irony has been approached linguistically, philosophically and psychologically. The interesting thing about irony, compared to the cognitive processes of metaphor and metonymy, is that while, at first sight, it seems a straightforward mechanism, its identification, let alone its definition, remains unclear. In the case of irony "a speaker contextually implies, at least seemingly, the opposite of what was literally said" (Gibbs and Colston 2007: ix). The question remains as to the nature of this opposition, and to that of literal meaning. Moreover, can we ultimately provide a definition of irony? Apart from its multi-faceted character (sarcastic, kind, humorous), irony is a fuzzy category gradually blending with or extending to mechanisms (types of contradiction) or processes (metaphoric irony).

Linguists have approached irony from various perspectives; they have focused on the relationship between ironic expressions (by the use of negation, mechanisms such as hyperboles, understatements,…) and speakers' intended meaning, that is, the relationship between what is said and what is implied; on properties and communicative functions of irony (e.g. verbal and nonverbal cues); on methods of identification of irony in discourse. Theories of irony which partially contribute to its clarification and interpretation complement one another, but differences and commonality disagreements remain. Therefore, irony seems to be a very broad and complex cognitive process, to say the least.

The theme session aims at further accounting for the multi-faceted discourse function of irony, in the way it is expressed linguistically, socially (culture, ideology, etc.) and psychologically.

The aims of the theme session are:

1. To discuss commonalities and differences between irony and non-irony (irony identification on the basis of criteria), irony and the figurative processes of metaphor and metonymy as well as other related issues, such as hypocrisy, simple contradiction, situational irony, etc.
2. To discuss the various ways linguistic expressions of irony reflect speakers' conceptualizations. Does the type of irony used by a speaker suffice in capturing the speaker's pragmatic intention? If a speaker intends a light-hearted banter, for example, are they interpreted as being meanly sarcastic? This could of course get at prosodic and metalinguistic cues for irony.
3. To discuss the link between irony and culture. This will provide access to possible underlying correspondences between situational and verbal irony.
4. To further develop empirical studies of irony. Authentic, discursive corpus, or other observational data, and experimental work can provide converging measures on different irony phenomena.
5. To account for multi-modal approaches to studying irony, clusters of irony in discourse, trumping and irony--and how semantic and schematic frames play a role here.

Contributors

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Irony has a metonymic basis

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Background

My hypothesis is that irony, due to its unifying and multi-faceted character, makes use of, is based on and is drawn from a broad range of disparate phenomena: cognitive processes such as metaphor and metonymy, and cognitive mechanisms such as sarcasm, hyperbole, understatements, euphemisms, etc. The speaker, by reversal, negation or opposition evokes a perspective. The question is how such evocation is achieved. Following Burgers et al. who define irony, as an "utterance with a literal evaluation that is implicitly contrary to its intended evaluation" (2011: 186), I, in this paper, will attempt to show that the evocation of a perspective is achieved by means of conceptual metonymy which may subsequently eventually prompt a metaphor.

The interplay between irony and figurative processes takes place in various grammatical constructions. A case supporting this claim are evaluative adjectives such as the often cited examples of the adjective-noun pair *What a wonderful weather* (for bad weather) or the adjectives *fine* (for a negative context) and *terrible* (for a positive context) in the Gibbs and Colston edited volume (2007).

In such cases, where a negative statement conveys a positive message and vice versa, speakers readily conceptualize and express irony via the opposition metonymy (Radden and Kövecses 1999: 45-48): A CONCEPT STANDS FOR ITS OPPOSITE. This implies that conceptual contiguity refers not only to similar but also to opposite entities belonging to one and the same domain.

In other cases a continuum or a scale is implied:

Speaker A: *This (mini) skirt suits me perfectly (a rather fat girl remarks)*

Speaker B: *Yeah, right, you look like a toothpick, exactly like your sister.*

In this example the irony lies in a series of metonymies. In addition to the opposition metonymy above (actually fat but ironically thin (thin for fat)), the vivid image of the toothpick reflects one position of the scale of weight, that is, she is extremely thin. The image of the toothpick lexically stands for an evaluative adjective like *skinny*; both entities belong to the same domain. Therefore, one entity can serve as "a reference point affording mental access to a target" (Langacker 1993). This is a case of the metonymy ONE ENTITY OF THE DOMAIN FOR THE WHOLE DOMAIN (toothpick for thin).

In both types of metonymies, the extreme end stands for the impossible or its opposite.

The implications of this work are that cognitive processes and mechanisms cooperate and they do not work on their own (we do not just have irony vs non-irony, as we have metaphor vs literal). On the basis that metonymy and metaphor are ubiquitous in thought and language, an attempt will be made to examine their role in the communicative effect of ironic utterances. The paper further examines if other grammatical constructions, uttered ironically, are encouraged by different types of metonymies.

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Irony in Relation to Other Figures in a Pretence-Based Framework

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The paper will in part refine an analysis (in Barnden 2012) of the hyperbolic aspects of much irony. That analysis was within the pretence-based approach to irony (cf. for example the work in philosophy of Currie 2006). The analysis argued that there are at least two major types of hyperbole in irony, one of which arises from a particular choice as to how a pretence space is deployed. The paper will develop this analysis further, linking it to the author's existing account of metaphor processing, which is likewise based on pretences.

Also, irony rests on contrast, and the paper will briefly consider the ways in which various types of contrast can be involved not only in irony but also hyperbole, metaphor and metonymy. This brings these figures together in an unusual way, though one that is partly inspired by the work of others, for instance Colston (2010).

The contrast aspect of the paper is part of the ongoing development of the idea (Barnden 2010) that it is not irony, hyperbole, metaphor, metonymy and so forth that should themselves be the main object of systematic scrutiny, but rather an array of underlying, more fundamental dimensions. These dimensions include: type and extent of contrast; type and extent of similarity; extent of involvement of source/target linkages themselves in utterance meaning; pragmatic contiguity; hypotheticality of the source; etc. The words "irony", "metaphor" and so on then merely label—roughly and heuristically—fuzzy overlapping regions in the rich space of possibilities defined by the dimensions.

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On irony and culture in Portuguese: What do authentic oral data tell us on discursive irony in European Portuguese?

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Background

In large bibliography on the subject (cf. studies by Giora, Colston, Gibbs, and especially Gibbs and Colston 2007) it has been assumed recently that irony is a fundamental way of thinking about the human experience. Using the etymological *pretence of ignorance* (as both in Greek and Latin the word means *simulated ignorance*), implying and conveying an intended creative meaning, it is believed that prototypically irony is the opposite of the literal meaning verbally expressed. In fact though, it is a multi-faceted phenomenon, preferred to literal counterparts in the situation of hidden criticism, in order to soften the edge of an insult, to control the emotions, and to avoid conflict and damaging social relationships. This multiplicity supports the fact that the concepts of politeness, face, maintaining social relationship as well as humour are to be seen in close connection with verbal irony (cf. Dynel 2011).

Recently (Gibbs 2012), common assumptions that irony is a deliberate pragmatic action have been argued with. It is postulated that ironic acts may not be as *deliberate* as it is often said they are and a dynamical view of intentional action is defended to explain more thoroughly the psychological complexities of how ironic acts are created and understood. Speakers choose to use these ironic statements for a variety of social reasons, and it is expected that this choice be strongly anchored in a given culture dependent on its social and pragmatic specificities, as well as cognitive ones, such as perspectivisation (cf. Dancygier & Sweetser 2012).

In the present paper we are going to discuss some of the ironic pragmatic actions observed in a European Portuguese oral discourse (corpus Morais 2011, based on *Português Fundamental*), especially in narrative discourse used in verbal interactions. It is a well-known fact (cf. Morais 2011) that in our daily verbal interaction we are prolific story producers and consumers, in a process which results in everyday narrative production that serves as a social stage for developing frameworks for understanding and reflecting upon events within our personal biography. The very process of storytelling enhances shared world knowledge, triggers a sense of closeness and contributes to creating a common ground of beliefs and values, which also triggers evaluating and criticizing the others. Thus in the present paper we propose to study both the linguistic resources that we employ in European Portuguese to create irony, and the role of cultural norms in authentic spoken narratives that legitimate these uses.

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Introducing a three-dimensional model of verbal irony: Irony in language, in thought, and in communication

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Background

We introduce a three-dimensional model for irony research that can be used as a framework to guide and inspire both theoretical and empirical research. The model is three-dimensional, in that we argue that the study of verbal irony requires three distinct dimensions: (1) language, (2) thought and (3) communication. This model is an extension of Steen's (2011) three-dimensional model of metaphor. We posit that making a distinction between these three dimensions is crucial to ground and resolve current debates on verbal irony and that it can bring together research on distinct figures like metaphor and irony within a single framework.

Irony in language vs. irony in thought

A first distinction research on irony is between irony in language (i.e., linguistic features used in ironic utterances) and irony in thought (i.e., conceptual structure of ironic utterances). For example, various authors have argued that the standard definition of irony (i.e., saying the opposite of what you literally mean) fails to adequately capture the concept of verbal irony, because not every ironic utterance communicates the opposite of what is explicitly said (cf. Gibbs & Colston, 2007 for examples). A classic examples is when John's friend Mary invites him to spend the month of May in Tuscany, because she says that the weather in Tuscany in May is always beautiful. Upon arriving, however, it is raining cats and dogs. John exclaims ironically: "*Oh Tuscany in May*" (Wilson & Sperber, 1992).

We posit that this example illustrates how irony in language is distinct from irony in thought. A linguistic analysis of the utterance *Oh Tuscany in May* shows that none of the words used can be replaced by an antonym (in contrast to an utterance like *Beautiful weather!* in which the word *beautiful* can be replaced). An analysis of the utterance's conceptual structure does show that it includes a contrast in valence by referring to both the previous promise (*the weather in Tuscany in May is good*) and the falsehood of that promise (*the weather in Tuscany in May is currently bad*).

Thus, an analysis of irony in language focuses on linguistic features used in ironic utterances. Such analyses can then focus on the way ironic utterances are constructed. An important sample question could for instance be if and when ironic utterances do or do not include irony markers (clues like quotation marks or hyperbole to facilitate irony detection, cf. Burgers et al., 2012).

An analysis of irony in thought focuses on the conceptual structure of verbal irony, which means that the two evaluations that are (implicitly) contrasted in the ironic utterance are analyzed. For some ironic utterances (*Beautiful weather*) the step from linguistic to conceptual analysis is straightforward, while other ironic utterances (*Oh Tuscany in May*) need more context to go from one level to the next.

Irony in communication

The third dimension is irony in communication. In some cases, ironic utterances are carefully planned by speakers to present their audiences with a certain perspective on a topic (*deliberate irony*), while in other cases, ironic utterances are made in a split-second without elaborate planning (*non-deliberate irony,* Gibbs, 2012). For example, John may have wanted to refute Mary's earlier promise about the May weather in Tuscany with his utterance *Oh Tuscany in May!*

Empirical evidence suggests that not only linguistic or conceptual features impact irony reception: the same ironic utterance can have differential effects on recipients based on the specific situation in which the utterance is made (Boylan & Katz, 2013). The third dimension thus concerns the differential goals and functions of deliberate and non-deliberate irony across discourse situations.

In sum, applying our three-dimensional model of irony will not only, we hope, help to structure debates in the field of irony studies, but will also help to align research on irony with research on metaphor, thereby providing an integration of the two fields.

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Irony Performance and Perception: Motivations Underlying Use and Comprehension

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Background

Most interdisciplinary accounts of irony, both situational and verbal, propose the concept of contradiction, contra-indication, negation or other more technical versions of the lay notion of opposition as a hallmark of the trope (Colston, 2000). The varieties of such invocations have also gotten very elaborate. Ideas such as plot twists/thwarted intentions, schema recognition, bi-coherence, implicit display of ironic environments, violations of felicity conditions for well-formed speech acts, contrast effects, etc., provide explicit and detailed demarcations of the ways by which ironic opposition is manifest in utterances and situations (Littman & Mey, 1991; Lucariello, 1994; Shelley, 2001; Utsumi, 2000; Kuman-Nakamura, Glucksberg & Brown, 1995; Gibbs & Colston, 2007; Colston, forthcoming).

Other accounts specific to verbal irony have unpacked the opposition notion a bit further to exemplify that *what* is being opposed, contradicted, etc., is a crucial component of verbal or performative irony—speakers typically invoke, in varieties of ways, expectations, desires, preferences, norms, etc., and somehow present those *as if in existence*, when reality has instead deviated from those expectations, etc. This juxtaposition then reveals motivation(s) for the verbal/performative irony—to point out, and frequently complain about—among other pragmatic effects, those deviances from desires, preferences, etc.

Less attention, however, has been given to motivations underlying situational irony, and potential links between situational and verbal/performative irony. Why would people notice and perceive oppositional/contradictory situations around them? Is situational irony an underpinning of verbal irony, did situational irony somehow precede the other types? Is it a special type of cognitive functioning, an epiphenomenon of something else (e.g., the nature of representation, Bryant, 2012), or is it a mere social construction? What is irony's essential nature, and are situational and verbal/performative irony related? The presentation will address these issues from both theoretical and empirical perspectives.

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The on-line processing of verbal irony: Comprehension and emotional impact

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Background

Despite the fact that verbal irony is very common in everyday language, little is known about the real-time psychological processes involved in understanding both the meaning of the utterance, and the emotional impact that it may have (see Gibbs & Colston, 2012, for an overview). Some recent research has used on-line methodologies such as eye-tracking and event-related potentials (ERPs) to examine the moment-to-moment processes involved in computing the meaning of an ironic utterance (e.g., Filik, et al., 2014; Kaakinen et al., 2014, Regel et al., 2011). Since these studies show that ironic language can be more difficult to process than non-ironic language, it is not clear why people choose to use ironic expressions instead of speaking literally. However, most theorists would agree that it may serve some other function that would not be achieved by speaking directly, such as eliciting a particular emotional response in the recipient (see e.g., Bowes & Katz, 2011, for recent discussion).

One point of controversy concerns whether ironic language is used to enhance or to mute the positive or negative nature of a message, compared to literal language. Dews and Winner (1995) suggest that irony serves to reduce the strength of the actual statement, that is, an attack becomes less negative, and praise becomes less positive, if phrased ironically. Specifically, they developed the *Tinge Hypothesis*, which states that the ironic meaning is 'tinged' with the literal meaning. For example, "That was clever", uttered as ironic criticism, is tinged with the literal, positive, meaning of *clever*, and is thus viewed as being less negative than a literal criticism. An alternative view is that irony might actually enhance the negative emotions felt by the recipient; specifically anger, irritation, or disgust (see e.g., Colston, 2007), perhaps because this form of language is considered appropriate if the speaker wishes to convey a hostile attitude towards the addressee (Lee & Katz, 1998).

The aim of the current research is to provide a detailed examination of moment-to-moment emotional responses to ironic compared to literal comments. Thus, we outline the findings from a series of experiments using a number of on-line (e.g., eye-tracking while reading, measures of approach/avoidance behaviour) and off-line (e.g., rating tasks) methodologies to investigate this issue. Overall, results suggest that emotional responses elicited by ironic as compared to literal language may change over time, and that whereas ironic language may lead to an enhanced emotional response initially (as suggested by eye movement measures indicative of initial processing, and approach/avoidance behaviour), it may later be rationalized as less hurtful and more amusing than literal criticism (suggested by eye movement measures indicative of later processing, and off-line ratings). Implications for theoretical accounts of the emotional impact of verbal irony will be discussed.

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Encouraging People to Use Irony

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Background

There are many reasons why people may sometimes speak, or even act, ironically. Most studies of ironic language use within linguistics, psychology, and philosophy emphasize the influence of social pragmatics in getting people to readily speak or understand ironic utterances. Several pragmatic theories even assume that people deliberately use irony to achieve specific rhetorical purposes. My recent work has taken a different tact by examining the internal psychological motivations for thinking ironically, which in turn facilitates the use of irony in speech and writing. This talk describes how individual conceptions of both bodily states and internal mental conflicts give rise to a greater propensity for ironic language use. I report the results of two studies showing how people can be pushed to speak ironically through exposure to bodily actions (e.g., pulling one's leg) or relevant linguistic statements (e.g., "pulling your leg") that are often associated with insincere actions. Another study placed individuals in situations that are likely to increase internal conflict, which may be best resolved, or commented on, through the production of ironic verbal acts. This research, most generally, aims to illustrate how irony emerges from psychological conditions of non-seriousness and internal conflict and not just from consciously-held communicative intentions to say one thing and mean another.

Default sarcastic interpretations: When negatives are easier to understand than affirmatives

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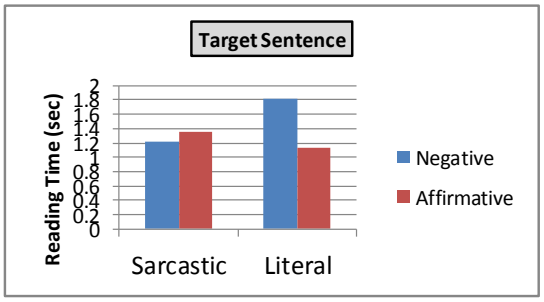
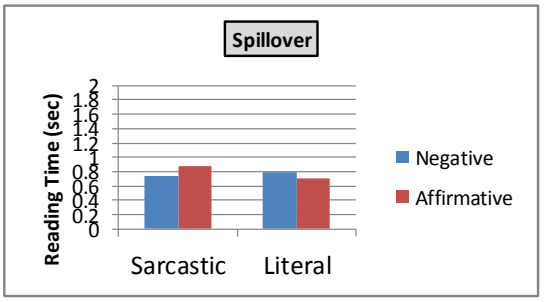
Background

The notion of defaultness assumed here relates to *interpretations* of linguistic stimuli that spring to mind unconditionally, regardless of explicit cueing, including contextual information. According to the Graded Salience Hypothesis (Giora, 1997, 2003), **default** interpretations are 'salience-based'; they are derived compositionally, based on the coded, salient meanings ('He is remarkably smart') of the stimulus components (e.g., *He is particularly intelligent*), irrespective of degree of (non)literalness. Such default interpretations will be activated unconditionally, regardless of strong contextual support to the contrary. They will therefore interfere with and slow down **nondefault**, 'nonsalient', context-based (e.g., sarcastically) biased interpretations ('He is stupid') not listed in the mental lexicon (Fein et al., 2015; Giora et al., 2007).

In contrast, according to the View of Default Nonliteral Interpretations (Giora et al., 2010, 2013, 2015), the **default** interpretation of some negative constructions (*He is not particularly intelligent*) is "nonsalient" ('He is stupid'); it is not based on the coded, salient meanings of the stimulus components. Instead, such negative constructions convey noncoded nonliteral (e.g., sarcastic) interpretations by default. Therefore, when in a context strongly biasing them toward their nonsalient but **default** sarcastic interpretation, they will be processed (i) faster than their affirmative counterparts (*He is particularly intelligent*), when in an equally strong context, biasing them toward their nonsalient **nondefault** sarcastic interpretation, and (ii) faster yet than when in an equally strong context biased toward their salience-based but **nondefault** literal interpretation.

On account of its established defaultness (Experiment 1), then, **default** negative sarcasm is expected to supersede **nondefault** affirmative sarcasm as well as nondefault negative literalness. As illustrated by the figures below, results, collected from reading times of Hebrew target stimuli and their spillover sections, support the View of Default Nonliteral Interpretations (Experiment 2):
They show that, when embedded in equally strong contexts, supportive of a sarcastic interpretation,





default negative sarcasm is processed significantly faster than (i) **nondefault** affirmative sarcasm and (ii) **nondefault** negative literalness, embedded in literally biasing contexts of equal strength (Giora, Givoni & Fein, in prep.). Additional results from eye-tracking (in English) (Giora, Howman, & Filik, in prep.) further argue in favor of the superiority of negative sarcasm over affirmative sarcasm, regardless of equally strong contexts. Negative sarcasm, then, is understood unconditionally, initially and directly, as predicted by the View of Default Nonliteral Interpretations (Giora et al., 2013, 2015). In contrast, its affirmative **nondefault** sarcastic counterpart is interpreted vicariously, involving **default**, salience-based interpretations in the process, as predicted by the Graded Salience Hypothesis (Fein et al., 2015; Giora et al., 2007).

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When is Irony Not Funny?

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Background

I will review lab-based experimental studies from over the last 15 years indicating the turns from metaphor to verbal irony and from irony to sarcasm. Emphasis will be given to the role played by the various players in the ironic interchange, the social complexity involved and how the use of irony changes our understanding of the ecology in which the irony is expressed.

Special emphasis will be given to discussion of three innovations. In one, multinomial processing tree model methodology will be applied to an extant dataset to see how negative criticism is processed when presented directly or as an ironic counterfactual. The role of humor in the processing of irony will be highlighted. Second, a constrained production task will be described which has been employed to study how participants conceptualize sarcasm. Finally, a recently completed experimental study will be described in which we employed a control group to address a longstanding question of when sarcasm is perceived as more negative or less negative than a literal counterpart.

Based on these and earlier findings, I will describe why I think some of the mixed findings in laboratory-based studies cannot simply be explained as measurement issues directing people to consider the presumed intent of the ironist versus the presumed impact on the recipient, and indicate the type of processing model one would consequently require. Lastly, I would like to be polemic and point out the need to examine ecologically-valid findings taken from naturalistic irony usage with lab-based controlled methodology.

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Irony in follow-ups and modifications of quoted metaphors

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Background

In competitive discourse (e.g. political debate), figurative expressions that are used by one participant may be followed up and 'countered' by other participants through ironical allusions, comments and altered quotations aimed at denouncing the original version or deriving a new conclusion from it. Thus, in Shakespeare's drama *Coriolanus,* the character Menenius is challenged after telling the allegorical "Fable of the Belly", in which the belly appears as the just dispenser of goods to the rest of the body, by an opponent who decries the "cormorant belly" as the "sink of the body", which turns the fable's "lesson" (and its application to politics) on its head and implicitly puts Menenius' competence to interpret the fable in question. More recently, the British political analyst Timothy Garton Ash compared the European Union to a "giant, weary tortoise, with [re-elected German] chancellor Merkel sitting astride its shell, trying to steer its woozy head and coax its bleeding underbelly across stony ground" and asked if it could "somehow outrun the American eagle and the Chinese dragon" or "at least keep pace with them" (*The Guardian* 25/09/2013). Whilst the tortoise image is mainly a grotesque caricature, the depiction of the other economic world powers as powerful, impressive animals that might nevertheless still be outrun is not just reminiscent of Aesop's fable (of the hare and the tortoise) but ironically undermines the assumed self-images of the competitor nations as captured by the respective national symbols. Such cases can be accounted for in Sperber and Wilson's echoic utterance theory of irony (Sperber and Wilson 1992), but what role does metaphor play in them?

Using data from a corpus documenting the long-running political debate in Britain about its place "at the heart of Europe", which generated numerous ironical follow-up statements and comments, the paper will investigate in detail the interplay between irony and metaphor, with view to the latter's semantic contribution to the former. It is argued that this contribution includes narrative and evaluative "scenario" aspects, which have to be assumed as known or taken for granted by the hearer in order to derive the ironical reading of the respective utterance (i.e., a reading that rejects the possibility or desirability of "Britain being at the heart of Europe") in its context. It is then asked which role the pragma-historical 'knowledge' of its preceding use(s) plays in the interpretation process and whether their metaphoricity is of significance. In particular, we will consider whether this discourse-historical knowledge should be viewed as a part of the assumed "metarepresentation" of the original utterance.

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Irony and the dogma of force and sense

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Cognitive modeling and irony

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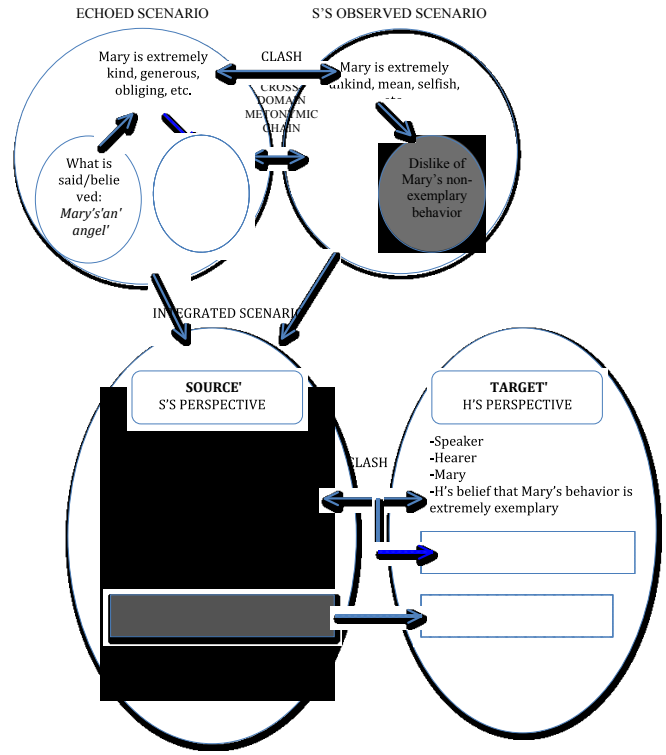
Background

Within inferential pragmatics, Attardo (2000) has explained irony in terms of "relevant inappropriateness", i.e. as flouting one or more Gricean maxims, which requires reinterpretation in compliance with the Cooperative Principle. Clark and Garrig (1984), in their *Pretense Theory*, contend that irony results from the speaker pretending to perform a given speech act. Relevance theorists (e.g. Wilson & Sperber, 2012), base their account on the notion of 'echo' or repetition of someone's (including the speaker's) previous words or their attributed thoughts or beliefs. In these theories there is recognition of a noticeable mismatch between what is said and the real situation. The differences are a matter of determining how the mismatch is created and solved. Perhaps, the most integrative approach is the relevance-theoretic account, which recognizes the existence of a clash and an echo, while highlighting the speaker's (usually skeptical) attitude to the echoed thought. Here, pretense, when it happens, arises from the speaker 'echoing' a previous thought from which he dissociates himself (e.g. a skeptical son who does not believe his father will stick to his promise to attend his graduation ceremony may ironically repeat his father's promise, which is thus no longer such: *Son, I will be there*). These inferential accounts are focused on the communicative aspects of irony. A complementary approach should deal with its cognitive aspects. We propose the following:

1) The speaker builds two incompatible scenarios. One echoes someone's thoughts, which are metonymically developed into a richer representation framing the echoed material. This representation contains an attitudinal element that is highlighted in a second metonymic shift. The other scenario is based on the speaker's observation. Its conceptual structure is incompatible with corresponding structure in the first scenario, including a highlighted attitudinal element that cancels out the one in the first scenario. This cognitive activity takes the form of a cross-domain metonymic chain whose second target is realized in the second scenario.

2) Following regular conceptual integration principles (Fauconnier & Turner 2002), the two scenarios combine into one, which contains the speaker's knowledge of the situation and his dissociation from the hearer's attributed beliefs. This structure clashes with corresponding structure built on the basis of what the speaker believes the hearer has in mind (which was previously echoed). If the clash becomes manifest to the hearer, he may accept the speaker's beliefs and attitude as his own.

The figure below applies this proposal to the ironic use of *Mary is an angel*. The presentation further discusses a selection of examples that show different forms of creating echoes thereby supplying taxonomic criteria for the cognitive-linguistic study of irony.



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Irony Across Media

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Background

An interesting feature of irony—one that distinguishes it from many other tropes—is the way it can be effected in a diversity of media (including nonlinguistic media), sometimes in interaction. Consider, for example, David Hockney's "Picture Emphasizing Stillness," which depicts two humans in conversation, unaware that a leopard, in mid-pounce, is only a moment away from causing one or both of them serious physical harm. In the space between the leopard and the conversationalists, Hockney inserts the following text: "They are perfectly safe. This is a still." Clearly, "Picture Emphasizing Stillness" involves irony; but attempting to analyze the irony raises a range of interesting questions. For example: is it the utterance encoded by the inserted text that's ironic? Or the painting as a whole? Or both? Is the irony involved significantly different from a case in which we imagine the utterance removed from the image and, instead, spoken by a person observing the painting? How seamlessly can the irony as it really is be analyzed in terms of our best theories of verbal irony?

My talk addresses these questions, along with others prompted by irony's presence in nonlinguistic and interacting media. These questions require us to develop a broader conception of irony — one that considers irony as a phenomenon that arises in interpretation generally, rather than in the interpretation of language alone. I'll argue that the task of expanding our best existing theories of verbal irony to meet this purpose is less straightforward than it might initially appear, and then offer my own account of irony in interpretation. According to this account, irony arises in interpretive situations whose medium (interpretive input) in some sense undermines, or is undermined by, its meaning (interpretive output).

In addition to the Hockney example, I'll apply this account to instances of irony in image alone (without the aid of a caption or title), and irony in lyrical music—first, to draw a contrast between irony effected or heightened by *interacting* media and irony effected in a single, but nonlinguistic, medium; and second, to illustrate the specific "twofold" (to borrow a term from Richard Wollheim) character of interpretation that makes the generation of irony possible.

Finally, I'll conclude with a brief discussion of how the insights that arise from considering irony as a feature of interpretation in general can deepen our understanding of irony in language in particular.

David Hockney's "Picture Emphasizing Stillness" –

Grammar, Speakers' Gestures, and Conceptualization

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Background

As a natural consequence of its usage-based approach to studying language, cognitive linguistic (CL) research is increasingly including gesture and other aspects of speakers' behavior as a focus of attention. An important role has been played here by hypotheses about how gestures derive from (or are influenced by) mental imagery that is active during speech production. Witness the research on the relation of gesture to 'thinking for speaking' (McNeill & Duncan 2000) building on Slobin (1987), to 'spatio-motoric thinking' (Kita 2000), and to sensori-motor simulations of actions (Hostetter & Alibali 2008).

While early research on gesture in CL focused on classic CL topics such as metaphor, image schemas, etc. (as discussed in Cienki 2013a), there has been increasing attention recently within CL to the claim that gesture relates to grammar itself (e.g., Cienki 2013b; Lapaire 2011; Mittelberg 2008). For example, cognitive grammar proposes that symbolic units in language consist of a semantic pole joined with a phonological pole, and according to Langacker (2008; 458), the phonological pole is abstracted in usage events from "both the full phonetic detail of an utterance, as well as any other kinds of signals, such as gestures and body language". Experimental and corpus-based research has indeed demonstrated that gestural expression is sensitive to grammatical functions such as aspect (Bressem 2012; Duncan 2002), negation (Calbris 2003; Harrison 2010) and modality (Schoonjans et al. 2013).

Fundamental issues that will be addressed in this session include

- the degree to which the more entrenched use of certain gesture form-function pairings in particular languages can be considered grammatical;
- the ways in which grammar embodies conventional imagery, and in turn:
- the ways in which grammatical imagery is conventionally embodied; and ultimately:
- how the nature of spoken language inherently calls for a view of grammar that is dynamic and multimodal (to varying degrees).

Kendon's (2004) term "speakers' gestures" is purposely used in the session title, both to constrain the scope to spoken language research (the topic of gesture in sign language raises some additional questions), and because the common term "co-speech gesture" could prematurely lead to the conclusion that gesture, in its own right, may not express grammatical functions.

The theme session includes talks from the points of view of cognitive grammar and construction grammar as well as other categories in CL that can be applied to the study of grammar, such as mental space theory, image schemas, and Talmyan semantic taxonomies of motion events. Specific phenomena to be addressed include aspect, transitivity, number, stance, and negation.

The session essentially combines two (sub)sessions, each with its own focus, but in combination covering a spectrum from (subsession 1) specific gestural expressions of grammatical categories to (subsession 2) the implications of including gesture in a (variably) multimodal cognitive theory of grammar. The session will end with comments from a discussant, intended to provide a broad overview of the implications of considering speakers' gestures in relation to grammar and its conceptualization.

Contributors

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Maarten Lemmens & Julien Perrez. University of Lille 3 / University of Liege. Gestural expressions of spatial information in L1 and L2.

Simon Harrison. University of Nottingham Ningbo. Organisational features of gestures associated with negation. The case of the Vertical Palm.

Cornelia Müller & Jana Bressem. European University Viadrina / Technical University Chemnitz. The Family of Away Gestures: Embodied roots of negative assessment, refusal, and negation.

Aliyah Morgenstern. Sorbonne Nouvelle University. Children's multimodal grammar under construction: The example of negation.

Jana Bressem. Technical University Chemnitz. Conceptualizing plurality in speech and gesture.

Irene Mittelberg, Jennifer Hinnell, Christian Beecks, Marwan Hassani & Thomas Seidl. RWTH Aachen University / University of Alberta. Emergent grammar in gesture: A motion-capture analysis of image-schematic aspectual contours.

Alan Cienki, Raymond Becker, Dominique Boutet, Aliyah Morgenstern & Olga Iriskhanova. VU University & Moscow State Linguistic U. / RWTH Aachen University / EVE University / Sorbonne Nouvelle University / Moscow State Linguistic U. Grammatical aspect, gesture, and mental simulation in Russian and French.

Camille Debras. Paris West University Nanterre La Défense. Visual stance markers: Is shrugging lexical or grammatical? Insights from sign language and language acquisition.
Eve Sweetser. University of California, Berkeley. Conditional constructions, gestural space, and mental spaces.
Catherine Bolly. Catholic University of Louvain. Towards pragmatic gestures. From repetition to construction in multimodal pragmatics.
Sabine Tabacaru. University of Lille 3. Gestural triggers at the semantic-pragmatic interface in humorous interaction.
Silva H. Ladewig. European University Viadrina. Conceptual reification and sequential scanning in gestures?
Suwei Wu. VU University, Amsterdam. Multimodality of the Caused Motion Construction.
Kasper Kok. VU University, Amsterdam. Gestures as blends of basic conceptual archetypes: Insights from a crowd-sourced perception study.
Mirjam Fried. Charles University. Discussant.

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Gestural specification and completion in multimodal construction grammar. A case study on instrumental and causal actions involving *Cut* and *Break*

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Background

Recent work in Construction Grammar has explored the possibility of extending the notion of construction to recurrent multimodal co-occurrences, involving a tight interaction between lexico-grammatical patterns and specific hand or head gestures (e.g. Steen & Turner 2013, Schoonjans 2014, Zima 2014, a.o.). Empirical studies supporting this claim on constructions as symbolic assemblies distributed over speech and gesture have focused primarily on

(i) the strength of the co-occurrence patterns and
(ii) conceptual similarities between the verbal and non-verbal profiling of the construed event (e.g. a manner of motion construction accompanied by an iconic path and manner hand gesture (Zima 2014)).

In this paper, we add a dimension to this recent work by inquiring into the potential *trade-off* between different semiotic modes. More specifically, we focus on this trade-off in the realization of *instrumental events*, in which an instrument is used by an agent to affect another entity, considered the final recipient of this transfer of energy (Sambre 2013: 140 following Langacker 2008: 135-136). In order to capture these multimodal patterns, we compiled a video corpus of elicited dyadic interactions (10 pairs of participants, all native speakers of Dutch). The design of these interactions is centered around the opposition between the instrumental actions of *cutting* and *breaking*, taken from work in cross-linguistic verb typology (Bohnemeyer 2007, Majid & Bowerman 2007). The participants were instructed to describe static images showing objects and instruments in terms of potential actions and their results. In their verbalization of these instrumental actions the participants spontaneously produced (co-speech) gesture.

The data for this study show that multimodal constructions grammatically profile parts of underlying semantic frames in different semiotic modes: instruments and causation are construed in both instrumental predicates (verbal) and/or co-speech gesture (nonverbal). More specifically, the analysis reveals specific distributional patterns, including:

(1) combinations of schematic instrument nouns or generic verbal predicates with **gestural specification** (co-occurrence with gesture in 82% of generic predicates, 59% of specific predicates);
(2) **gestural completion** of an unfinished verbal utterance: the non-verbalized part of the utterance –pertaining either to the instrument or the instrumental action– is subsequently realized in gesture by the same speaker;
(3) **co-construction** involving different speakers in a similar process of complementation across modes.

The pervasiveness of gestural specification and completion, emerging from the distributional analysis, provides evidence for a strong interaction between the two modes of representation in realizing embodied action verbs. On a more general level, the results lead us to reconsider the study of grammatical patterns for semantic roles in terms of both multimodality and interactional grammar.

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Gestural expressions of spatial information in L1 and L2

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Background

This paper reports on the analysis of gestures in the expression of *static* locative relationships in French and Dutch, for L1 speakers as well as for francophone learners of Dutch (L2). The data analysed is drawn from video-taped picture descriptions where subjects were asked to talk about the location of certain entities on these pictures.

Tutton (2012) has observed that in spatial descriptions gestures often express information that remains unexpressed in the verbal production and that typically the information that is gesturally expressed is directional (cf. also McNeill 2000; Gullberg 2009, 2010). Our data only partially confirm his findings: in most cases, gestures express information that is also expressed verbally. In addition, while gestures are indeed well-suited to express direction, we argue that a clearer distinction is needed between directional and (purely) locational gestures. We suggest that the crucial factor identifying a locative gesture is the fact of the gesture being ***anchored*** in the representational gesture space, an issue that hitherto has not been discussed in the literature. While all gestures are necessarily made in the gesture space, anchored gestures are those that receive a clear representational location. These can be pointing gestures, but often they are not (e.g., an anchored shape-, size- or manner-gesture). Functionally, they are not unlike what Liddell (2003) has called *buoys* in ASL, i.e., clearly located and stationary signs that function as conceptual landmarks while the discourse continues. The difference with anchored gestures is that the latter are not stationary. Non-anchored gestures do not have such a precise location. For example, directional gestures are not really anchored to a specific point, but merely indicate a direction. Similarly, some iconic gestures express locative relations (e.g. BETWEEN, EVERYWHERE), but are made without being anchored in the representational gesture space (e.g., just in front of the speaker, in centre space). We argue that despite their locative semantics, they are not locative gestures. In fact, anchored locative gestures could thus be seen as grounding predications, i.e. "an instance (but not a type) is thought of as having a particular location in the domain of instantiation" (Langacker 1991:57).

In addition, typological differences are manifest in gesture. In line with Talmy's (2000) typological distinction between verb-framed and satellite-framed languages, Dutch can be described as a "location-rich" language and the descriptions of the native Dutch speakers abound with locative descriptions, through the highly grammaticalised use of posture verbs but also via other linguistic means (prepositions, adverbs, etc.). French, in contrast, is "location-poor": the French narrations have significantly fewer locative descriptions and the locative information is much more general. Instead, they add narrative detail and meta-linguistic comments to their descriptions.

The francophone learners of Dutch (with 3 levels of proficiency) use more gestures revealing the challenge that free expression in a second language poses, especially for the lowest proficiency levels: they use more shape gestures, more enactment gestures (e.g., pulling a drawer, brushing one's hair, etc.), more reality-anchored gestures (e.g., pointing at one's shoes when talking about shoes), and more meta-communicative gestures indicating their lexical shortcomings, e.g., word-search gestures (see Ladewig 2011). Overall, and as can be expected, the low proficiency L2 speakers use almost more gestures than words, which can be seen as a visual compensation for their lack of lexical accuracy; the gestural expression of advanced learners, in contrast, is much more locational in nature, in line with the target language (cf. also Gullberg 2009, 2010, Alferink & Gullberg 2014).

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Conceptual organization features of gestures associated with negation. The case of the Vertical Palm

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Background

This research draws on cognitive accounts of negation to help explain variations in the form and function of a 'recurrent gesture' (Ladewig, 2014). The recurrent gesture in focus was termed the 'Vertical Palm' gesture by Kendon (2004) and has previously been connected to the expression of negation from the perspectives of its context-of-use (Kendon, 2004), co-occurring grammatical structures (Author, in press), and underlying action motif of 'blocking' or 'holding away' (Bressem & Mueller, 2014; Kendon, 2004). However, the conceptual mappings between the Vertical Palm's various manifestations, actions, and linguistic negation in discourse have not yet been described in detail.

15 examples of the Vertical Palm gesture taken from a video corpus of elicited but non-controlled conversations in English are used to map out the gesture's form-function relations. These relations emerge from qualitative methods of analysis integrating fine-grained description of gesture form features with basic linguistic analysis of the utterances and discourse analysis of the role those utterances play in the interaction (Bressem, Ladewig, & Mueller, 2013; Mueller, Bressem, & Ladewig, 2013). This step contributes to previous work on the gesture by offering a systematic description of the salient form-function variations, which relate to a number of action motifs, and then serves as the empirical basis for a second, conceptual phase of analysis involved in the method. The conceptual analysis describes metonymic and metaphoric mappings between gesture form and meaning, while situating the mappings more broadly within Johnson's (1989: 41-64) theory of force schemas and Chilton's (2006, 2014) treatment of negation as maximal distance in Discourse Space Theory (Chilton, 2006, 2014; Johnson, 1987).

The model that emerges sheds light on an embodied conceptualization of negation, with the result of further grounding embodiment theory empirically in the way people gesture when they speak.

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The Family of Away Gestures: Embodied roots of negative assessment, refusal, and negation

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Background

The paper addresses the emergence of meaning from manual action and the evolution of a gesture family based on a semanticization of a shared effect of the motivating actions of the hand(s). The work presented here, builds upon a range of linguistic, semiotic, and anthropological studies of recurrent forms and functions in co-speech gestures, all of which point out that variations in gesture forms go along with differences in meaning (Calbris 2003, 2011; Harrison 2010; Kendon 2004; Ladewig 2011, [author] 2004; [author] 2002; Payrató & Teßendorf 2014). Kendon's pioneering work on gesture families has shown that such variations may be systematic and constitute gesture families: "When we refer to families of gestures we refer to groupings of gestural expressions that have in common one or more kinesic or formational characteristics. [...] Each family not only shares in a distinct set of kinesic features but each is also distinct in its semantic themes." (Kendon 2004: 227)
Departing from Kendon's analysis of the Open Hand Prone (OHP) family and further work on "gestures of negation" (Calbris 2003, 2011; Harrison 2010; Kendon 2004), the paper will offer a linguistic and form-based account of a gesture family which is not only based on shared formational features and common semantic themes, but which is additionally motivated by a shared effect of an underlying action-scheme. The family of Away Gestures was discovered in the context of a datadriven documentation of a repertoire of recurrent gestures of German, based on a corpus of 24 hours of video data from a variety of discourse types. It was identified by applying a linguistic and form based analysis to the motivation of gesture forms (kinesic features and movement gestalts) and their distribution across contexts-of-use. In presenting results from this research, we will argue that the family of Away Gestures is semantically motivated by the effect of actions of removing or keeping away of annoying or unwanted things from the body. The family has in common that something has been moved away, or something is being kept away from intrusion. Sweeping Away gestures are used to *reject* and *exclude* topics of talk, they *negate manually*. Holding Away gestures *refuse* and *stop* unwanted topics of talk. Brushing Away gestures remove and dismiss annoying topics of talk, by rapidly brushing them away from the speaker's body. They assess topics of talk *negatively.* Throwing Away gestures remove and dismiss topics of talk, by metaphorically throwing them away from the speaker's body. The clearing of the body space goes along with a qualification of the rejected objects as annoying, that is, a topic of talk is being *negatively assessed.* It will be concluded that the form based linguistic approach applied here provides further evidence to a notion of 'gestures as visible actions' (Kendon 2004) and offers support for a praxeological understanding of gesture (Streeck 2009). In short, it opens up a path to systematically reconstruct the embodied roots of gestural meaning.

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Children's multimodal grammar under construction: The example of negation

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Background

We consider language as being composed of a vast set of semiotic means on which speakers rely to construct meaning and which are all part of our socially learned, intersubjective communicative system that can be analyzed as an integrative multimodal system, particularly in adult-child interaction. The study of the expression of negation in longitudinal data of adult-child conversations is a privileged locus for a multimodal approach to language acquisition. Indeed, previous research on first language acquisition has highlighted a tight relation between actions, gestures, signs and speech to express negation. As discussed by Spitz (1957) and Clark (1978), children's first negative constructions seem to take over from early gestures of rejection and avoidance. In parallel to this developmental observation, for Kendon (2002), in many cultures, gestures of negation are a progressive ritualization of spontaneous actions. In both cases, bodily reactions and actions are transformed into communicative gestures. A number of authors have observed the transmodal continuity in the expression of negative speech acts (Bates et al. 1979) and how negation is expressed through head shakes, index waves, palm up epistemic gestures as early as the end of the first year, sometimes before first verbal markers (Guidetti 2005).

The aim of our research is the construction of a developmental multi-semiotic overview of children's expression of negation and the blossoming of their multimodal skills with a focus on similarities between children but also on individual and cross-linguistic differences. In this study, we coded and analyzed all the actions, gestures, vocalizations and verbal productions – produced alone or in combination - of a French-speaking (Madeleine) and an English-speaking (Ellie) monolingual child filmed one hour a month between the ages of ten months and four, along with those of their adult interlocutors. Over 2000 occurrences in each dyad were coded. We developed a specific multimodal coding system relying on previous typologies of negation (Antinucci & Volterra 1979; Pea 1980; Cameron-Faulkner et al. 2007). We combined the use of EXCEL, CLAN and ELAN with video data aligned with transcriptions to analyze the functions of different forms of negation according to context in dialogue. Results indicate that the two children use several modalities throughout the data with a diversification of negative functions, but with individual differences. Ellie follows a path from actions to symbolic gestures first produced in isolation and then combined with words before using complex verbal productions. After a period when actions are integrated in dialogue and interpreted by the adults as refusals and rejections, Madeleine very quickly uses verbal productions and does not rely on symbolic gestures at first. During their fourth year, both children gradually master multimodal means of expressing the subtleties of negation and the visual-gestural modality makes a striking comeback in the two children's data with the use of co-verbal gestures.

When we analyze the forms used in detail, we can observe that the two children are multimodal from the very beginning of the data but that the use of multimodality differs according to their cognitive, motor and linguistic development. The multimodal resources are first used in an integrative manner in the service of a global communicational intent. The productions become more complex as the children grow older and each modality can then be used with specific functions, which either reinforce or complement each other. This study thus illustrates why we must analyze the interfaces between different linguistic levels and different modalities in order to understand children's mastery of the multimodal expression of negation.

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Conceptualizing plurality in speech and gesture

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Background

All natural languages have the ability to distinguish between one and several entities (singular vs. plural). Languages express singular by unmarked forms. Plural is expressed in nouns, pronouns, demonstratives, determiners, verbs, and adjectives through marked forms derived from morphological processes such as affixation or reduplication. Furthermore, based on the principle of diagrammatic iconicity (Peirce 1960), plural is understood as being iconic in relation to the aspect of quantity and complexity: More of the same of form leads to more complexity and more meaning (e.g., Mayerthaler 1980).

The present paper explores the notion of plurality in gestures and proposes that a similar conceptualization and expression can be seen in gestures. It is suggested that gestures are able to express to plurality through reduplication, which, grounded in the principle of diagrammatic iconicity, carries the basic structure of "more form = more meaning".

Based on video data of 23 hours of German discourse and a study examining repetitive sequences in gestures, it will be shown that gestures are able to build units of different complexity and functionality (Bressem 2012, 2014). By maintaining gestural forms and repeating them through movement along the horizontal axis, gestures are able to build reduplications, that is, complex gestural units, in which the repetition of individual expressive phases leads to the creation of a complex gestural meaning. In these gestural reduplications, different areas in front of the speaker's body are understood as different yet similar areas in space. Due to contiguity and similarity, these different spaces are grouped and perceived as belonging together (Langacker 2008). Moreover, a diagrammatic iconic relation between them arises in which relations of forms are mapped onto relations of meanings. As a result, gestural reduplications are iconic in relation to quantity and complexity: More of the same gestural form leads to a change in the semantic complexity (one space vs. many spaces) resulting in the conceptualization of plurality.

Concluding, the paper puts these findings in relation to the expression of plurality in sign languages (Steinbach and Pfau 2012) and verbal-pictorial depictions and proposes that the horizontal alignment in different spaces could be seen as one natural strategy for expressing plurality in the visual modes.

With this focus, the paper aims to lay the groundwork for further investigations into the nature and conceptualization of plurality in cognition, language, and gesture.

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Emergent grammar in gesture: A motion-capture analysis of image-schematic aspectual contours in North American English speaker-gesturers

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Background

Embodied image and force schemas are central to experiential accounts of meaning (e.g. Hampe 2005; Johnson 1987; Talmy 2000). Gesture research has shown that communicative body postures and movements may reflect a range of basic schemas such as PATH, OBJECT, CONTAINER, LINK, BALANCE, CYCLE, STRAIGHT and CENTER–PERIPHERY, as well as force-dynamic schemas (Cienki 2013; Mittelberg 2010). This study contributes to recent work suggesting that co-speech gesture be integrated into our understanding of the form-meaning pairings that constitute constructions.

Building on a previous study of conventionalized aspect-marking gestures (Hinnell 2014), this paper presents an image-schema analysis of English multimodal discourse sequences containing aspectually-charged constructions, e.g. the auxiliating "co-verb" CONTINUE, prepositional phrases, and other constructions that draw TAM-marking to the forefront of the gesture profile. The main assumptions underlying this perspective on multimodal discourse are that a) a set of image and force schemas underpins gestural construals of experience and abstract processes; and b) the image-schematic structures identified in gesture may correlate with aspectual markers expressed in the spoken utterance.

The corpus for this study contains audio, 2D video and 3D motion-capture data recorded with an optical motion tracking system. Eight native speakers of NA English recounted and interpreted short movies and conversed about topics such as habits and hobbies, resulting in approximately 6 hours of recorded interaction. Combining qualitative and quantitative analyses, we first identified those discourse sequences in which the trajectory, direction, and form of the gesture trace (circle, spiral, arc, etc.) reflected one of the conventionalized, aspectually-charged forms established in the previous research. Gesture form parameters were annotated (Bressem et al. 2013), as were quantifiable variables including the number of separately articulated phases, asynchrony of onset between the linguistic cue and gesture onset. Drawing on the motion-capture data, we visualized the otherwise invisible traces and temporal dynamics of the gestural movements to obtain more insight into fine-grained differences in gesture articulation. Finally we performed computational analyses of gesture similarity by means of a distance- based similarity model using raw MoCap data (Beecks et al. 2013).

Initial results indicate correspondences between movement trace and expression of aspect in co- speech gesture. Here we propose an image schema analysis of these combinations of aspect-marking in the speech utterance and the specific contours in the kinetic action. Clusters of image and force schemas are seen to motivate higher level construal of the events being represented. Drawing on the idea of an emergent grammar (Hopper 1998), this research contributes to a growing body of work investigating systematicity in the kinetic expression of construal operations by providing a qualitative and quantitative account of meaningful multimodal behavior.

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Grammatical aspect, gesture, and mental simulation in Russian and French

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The analysis of speech and gesture provides insight into the mental representation of how an event occurred in time and how people communicate about it in a multimodal fashion. Duncan (2002) showed that the duration of gesture strokes tends to be longer and more agitated with event descriptions in the imperfective than with those using perfective verb forms. These gesture features were found in English, which marks progressive and non-progressive verb forms, and in Mandarin Chinese, which uses durative and perfective particles to characterize described events as ongoing or as complete. These findings were further confirmed for English by McNeill (2003) and Parrill et al. (2013). Even research including English as a second language (Becker et al. 2011) has shown that both the production and comprehension of verbs expressing different event types can be related to co-speech gesture features that reflect specific semantic aspectual categories going back to Vendler (1957, 1967).

However, despite the universality of time as a factor in human existence, the languages of the world have a wide range of ways, via grammatical systems of verb tense and aspect, for characterizing how events play out in time. The present project considers Russian and French: two languages with key structural differences in expressing aspect (the temporal contour of events) through different kinds of grammatical structures. These languages mark an aspectual distinction grammatically in the past that is the same in one respect and very different in another: the two languages share a grammatical contrast between focusing on the internal structure of an event (imperfective aspect in Russian; imperfect tense in French) versus not doing so, but the latter is expressed with the perfective aspect in Russian and with different tenses in French such as the perfect (*passé composé*), pluperfect, historic present, or (in literary texts) the simple past.

The data for this study were collected using the prompts from Becker et al. (2011) to elicit short personal narratives about events of different types. The prompts were translated into French and Russian. Ten pairs of university students served as participants with informed consent in Paris (native speakers of French) and ten pairs in Moscow (native speakers of Russian). The mean length of the conversations in each language was ten minutes. Verbs referring to past events were coded for tense and aspect as well as past or non-past time of events narrated, in order to capture any use of the historic present in the coding.

How can we know if the use of different grammatical forms that are available in different languages relates to different kinds of thinking for speaking in those languages, and if so, in what ways? We cannot assume that the imperfective forms in one language necessarily mean the same thing as those in another language. However, we can see through gestural behavior if there is something similar or not in speakers' experience when talking about events in the past using imperfect(ive) aspectual forms as opposed to other verb forms. In addition to the coding of the verb forms in the data, any gestures used in the same grammatical clauses as the verbs are being coded for their forms. However rather than using the form features now common in gesture research (popularized by McNeill 1992), which describe gestures in relation to the space in front of the speaker, our study is employing a physiologically-based kinesiological system introduced in Boutet (2010). The set of categories involved prioritize movement analysis, considering details of the segments of the hand and forearm moved, the form of movement in relation to the structure of the hand (e.g., flexion or extension), its flow from segments proximal to distal from the body or the reverse, changes in velocity, etc. These serve as micro-level categories that we can group for interpretation in terms of meso-level aspectual features familiar from the linguistic literature, e.g., durativity, punctuality, (un)boundedness (see, e.g., Müller 2000). In this way, the gestural representations of speakers' construals of event structures can be correlated with the verb forms used (macro-level categories) and compared across the two languages.

This form of gesture analysis, closely connected to the embodied properties of muscular exertion or effort (Laban & Lawrence 1974/1947), provides a window onto speakers' dynamic construals of events (as McNeill 1992 suggests), building on the claims that gestures embody mentally simulated actions (Hostetter & Alibali 2008). By tying this gestural analysis to the tense/aspectual forms of the verbs in the clauses accompanied by gestures, the study shows how the analysis of gesture can provide solutions to semantic analysis in cognitive linguistics, where meaning is increasingly being studied in terms of mental simulation (e.g., Barsalou 2008; Bergen 2012; Gibbs 2006).

Visual stance markers: is shrugging lexical or grammatical? Insights from sign languages and language acquisition.

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Background

Shrugging is traditionally defined as an emblem (Ekman & Friesen 1969), i.e. a culturally conventionalized gesture, which is found in Western cultures. This composite communicative posture can combine palm-up flips, lifted shoulders, a head tilt and facial action like raised eyebrows and/or a mouth pout (Givens 1977, Morris 1994, Kendon 2004, Streeck 2009). In previous work, we analysed the shrug as a visual marker of stance (Debras 2013) expressing multiple modal functions (among which non-responsibility, incapacity, ignorance, common ground) unified by a pragmatic expression of the speaker's distance or disengagement in a 2h40 corpus of videotaped dyadic interactions between native British adults (122 occurrences systematically annotated for form and function in ELAN).

But can we account for a conceptual unity of the shrug's diverse functions? As a conventionalized posture, is it only lexical or does it display more abstract, schematic, grammatical(ized) features?

Language change through grammaticalization has been identified for both words (Traugott & Dasher 2002) and signs (Janzen and Shaffer 2002, Wilcox 2004). Although the shrug is a gesture and not a sign in BSL (Sutton-Spence & Woll 1999), its functions can be distributed along a grammaticalization cline as well: from concrete/ external (incapacity, helplessness), to abstract/ internal/ subjective (ignorance, rejection), to abstract/ intersubjective ones (obviousness, common ground), the shrug seems to have undergone the complete process of intersubjectification (Traugott & Dasher 2002).

How can we know whether this synchronic account actually reflects the posture's evolution over time? While sign linguists document the grammaticalization of signs phylogenetically with historical data (Janzen and Shaffer 2002, Wilcox 2004), we want to suggest that an ontogenetic viewpoint can also cast light on the cognitive-functional development of the posture's meanings and functions (Derbas & Beaupoil-Hourdel submitted). In a longitudinal video corpus of spontaneous interactions between a typically developing little British girl, Ellie, and her mother, filmed one hour each month from Ellie's ten months to her fourth birthday, the systematic annotation (in ELAN) of shrugs performed by Ellie yields a total of 89 occurrences. Ellie's shrugs diversify from concrete functions (absence of people or objects from 1;04) and actional ones (incapacity from 1;05) to more abstract, modal ones (ignorance from 2;08), soon followed by interpersonal ones (disengagement from 2;10).

This data suggests a re-evaluation of the core meaning of shrugging. While Streeck (2009) proposes that shrugs originate in physical movement of disengagement, the child data suggests something different: the basic, concrete meaning of absence seems to grammaticalize as a schema (Cienki 2005) in more abstract meanings of the posture (e.g. incapacity: absence of capacity; ignorance: absence of subjective knowledge; common ground: absence of new intersubjective information), as the individual's cognitive capacities develop. We discuss this evolution of functions in the light of the formal variations of shrugs used by children and adults.

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Conditional constructions, gestural space, and mental spaces

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Background

In recent years, a major body of research has shown the close connection between speech and cospeech gesture. Gesture has proven an added source of information about co-speech cognitive patterns, for example in examining metaphors of time (Núñez et al. 2006, Núñez et al. 2012). It is also generally accepted that in gesture, as in signed languages, locations or areas in physical gesture space are associated with topics or other areas of meaning being expressed. Less work has been done on the associations between grammatical constructions and gesture, although gesture researchers generally acknowledge that "erasure" swipes often accompany negation. This paper examines the spatial structure of gestures accompanying English *if*-conditionals, and argues that these physical spatial structures reflect mental space construction. It has been claimed (Fauconnier 1997, AUTHOR 2005) that the function of conditionals is to set up particular mental space structures, involving a Conditional Space (set up by the *if*-clause) and an Extension Space where the consequent holds as well as the antecedent. In a predictive conditional such as *If you open the window, it will get cold in here*, the predictive function involves setting up of two alternate space structures – the expressed conditional space and extension, and an alternate one where the window stays closed and the room stays warm. In a speech-act conditional, on the other hand, there are not typically two such alternate spaces built – e.g. *If you need to reach me, my phone number is 238-5861* presumably does not mean that the phone number is different if the addressee does not need to reach the speaker.

In some gestural structures, mental space structure seems to correspond to physical space structure: e.g. a speaker might alternate between sides of her body when gesturing about a past situation and a present one. A possible set of predictions about conditionals, therefore, might be: (1) gestures accompanying predictive conditionals are expected to manifest presentational hand gestures or head gestures towards one side of the speaker, (2) gestures accompanying predictive conditionals may manifest movement outwards from the original locus associated with the *if*-clause, to an extension space locus farther from the body and (3) where there is active comparison of alternatives, hand and head gestures may literally alternate sides. Also, (4) nonpredictive conditionals will not involve locus placement to one side, or alternation between loci, since they don't involve alternative spaces.

We are using data from the UCLA corpus of captioned television programs, concentrating on talk show and interview data, rather than on fully scripted programs. We search for *if*, eliminating both the indirect questions and the numerous cases where speakers' bodies and hands are not sufficiently visible. We then annotate utterances for associated use of space. In our first 100 examples, speech-act conditionals do not pick a locus on one side of the body; and not a single speech-act conditional has involved alternation between sides of the body. Rather, gestures appropriate to the 'conditional' speech act are performed – e.g, a speaker says, *If you like action, there's plenty of action in this movie*, and extends both hands palm-up simultaneously (not alternately) in a presentation gesture ("here's my point"). Predictive *if*-clauses (*if we finish on time*…), however, frequently involve setting up a (pointed, or palm-up) one-handed space, often with gaze or head movement towards that side, sometimes followed by moving the hand outwards during the consequent clause – and they sometimes also involve alternation between sides, when the contrast becomes topical (*if we don't*…). Initial results are therefore promising – there is potential evidence for a correlation between gestural space and the specific mental space semantics of *if*-conditional constructions. We are gradually building up a corpus and should have at least 500 examples categorized by May 2015.

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Towards pragmatic gestures. From repetition to construction in multimodal pragmatics

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Background

Pragmatics is concerned with the relation of linguistic items to their context of utterance, their users and interpreters, that is, with context-dependent aspects of meaning. Studies in pragmatics also recognize that nonverbal communication mechanisms (including gestures), alongside verbal aspects of communication, are at the core of the creation of meaning in the interaction context (Payrató, 2009: 175). Given this context-sensitive and multimodal view of pragmatics, 'pragmatic gestures' will be defined here as formally heterogeneous, multifunctional, (mostly) non-representational and (often) unintentional visible actions in language interaction, which express "aspects of utterance structure, including the status of discourse segments with respect to one another, and the character of the 'speech act' or interactional move of the utterance" (Kendon, 1995: 247).

The aim of the present talk is to answer the following question: To what extent non-representational gestures with a pragmatic function are conventionalized? The hypothesis is that pragmatic gestures can be seen as multimodal constructions insofar as they consist in learned pairings of form with discourse function (Goldberg, 2006: 5). As it has been shown for contructionalized pragmatic markers in speech (Bolly, 2014; Travis & Torres Cacoullos, 2014), I suggest to tackle pragmatic gesturing in terms of continua from idiosyncratic uses to more conventionalized ones. The focus will thus be on the conventionalization process of pragmatic units, highlighting the particular role of repetition (Bybee, 2006) in the gradual process of fixation of multimodal constructions in the linguistic system.

The multimodal approach explores the function of pragmatic gestures in audio and video data taken from the CorpAGEst corpus, which is comprised of 18 semi-directed, face-to-face interviews (9 subjects; 16.8 hrs; approx. 250,000 words). Adhering to some extent to the categorization of visible actions in dialogues proposed by Bavelas *et al.* (1995), three types of pragmatic gestures are distinguished: self- and object-oriented actions (*viz.* adaptors), stereotypical signals (*viz.* emblems), and conversational gestures (*viz.* topic and interactive gestures). In line with form-based approaches to gesture (Müller *et al.*, 2013), relations that exist between speech and nonverbal resources (including hand gestures, facial displays, gaze, head, shoulders, torso, and feet) are also investigated. Particular attention is paid to clusters and recurrent combinations of (non)verbal parameters (*e.g.*, gaze direction, head shake, hand location in the subjective space, occurrence of discourse marker, etc.). Preliminary results from a study of emotional and attitudinal states in the healthy elderly people (Bolly & Thomas, 2015) indicate that the use of nonverbal resources is highly idiosyncratic: for instance, no clear physiological pattern seems to be emotion-specific. Yet, some regularity may still be noticed: for instance, 'surprise' is mainly (but not exclusively) expressed by means of eyebrow raising, often combined with an exaggerated opening of the eyes.

It is worth pointing out that language variation and idiosyncratic uses are viewed here as constituting the central object of research, as being "the entering wedge for discovering the invariant, the system viewed as a living entity, an entity which takes shape and evolves through use, through the speakers as members of a group sharing a culture and a vision of the world" (Cuenca, 2003: 7).

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Gestural triggers at the semantic-pragmatic interface in humorous interaction

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Background

The growing interest in humor within the field of Cognitive Linguistics these past few years (Brône and Feyaerts 2003; Veale *et al.* 2006; Brône 2008) has led to the conclusion that humor exploits inferences through linguistic imagery and is highly creative. Following Yus (2003: 1299), we assume that humor uses discourse markers that allow the audience to see that what is being said should not be taken seriously. In this study, based on a large corpus of examples extracted from two American television series (*House M.D.* and *The Big Bang Theory*), we add a yet unexplored multimodal perspective — that of facial expressions and head movements accompanying humorous utterances in different humor types. More specifically, we present a qualitative and quantitative analysis of facial expressions (raised eyebrows and frowning) and head movements (head nods and head tilts) used in interactional humor, arguing that they play a role in switching the context to a humorous interpretation. Our study analyzes humorous utterances against the background of Clark's layering model and Fauconnier's mental spaces theory (Brône 2008). We illustrate how these gestures function as "gestural triggers", allowing the hearer to make the connection between explicature (i.e., what is explicitly communicated by an utterance; cf. Carston 2002) and implicature (assumptions that are not explicit and that the hearer has to infer from the contextual environment, cf. Grice 1989). As such, we show that theses gestures play an important role in the understanding of the humorous message because they guide the hearer to interpret utterances in a humorous way and they contribute to meaning construction. There are two possible perspectives to interpret the role of these gestures in humorous exchanges: a semantic or a pragmatic perspective. The semantic perspective considers the semantic functions of these gestures in such humorous interactions: raised eyebrows are seen to express surprise, frowning, to express disagreement, and head nods express agreement with the speaker, even if sometimes, speakers will nod while refuting the interlocutor's idea. From a pragmatic perspective, these gestures are seen as underliners (Ekman 1979), i.e. pragmatic markers that highlight the humorous trigger (a certain attitude or word), as part of the expression of a speaker's attitude (just like tone of voice). These gestures come as 'helpers' toward the intended interpretation, but this does not work both ways, i.e., people raising their eyebrows, frowning, or using head movements does not necessarily mean that they are using humor. The fact that these gestures co-occur with certain words or larger parts of a speaker's utterance means they may be used on the central part of a humorous message, where the hearers are alerted to change to a pretense, non-serious space. From a grammatical perspective, these gestures may also be regarded as "overt physical manifestations" of modal stances, aspectual contrasts, deixis, causality, and concession (Lapaire 2011: 92).

Key words: *humor; facial expressions; head movements; semantics; pragmatics*.

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Conceptual reification and sequential scanning in gestures? – On Gestures and their relation to nouns and verbs of spoken language

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Background

Nouns and verbs are regarded as universal and fundamental grammatical categories of language. In Cognitive Grammar, nouns are defined as profiling things, verbs as profiling processes. Basic cognitive abilities such as grouping and reification as well as apprehending relationships and sequential scanning are considered mental operations from which things and processes emerge. (Langacker, 2000, 2008)

This paper takes Langacker's idea of basic cognitive abilities of conceptual organization into the context of gesture research and addresses the question of whether these cognitive processes underlie the conceptualization of gestures. More precisely, it explores how gestures are comprehended and conceptualized depending on the syntactic position of the utterance they occupy. The study to be presented addresses gestures, replacing spoken constituents of utterances in sentence final position (Ladewig, 2014). These gestures, identified in a data set of 20 hours of naturally occurring conversations, were found to replace preferably nouns and verbs of spoken language. The identified gestures were taken as stimuli for perception test, investigating 1) how gestures are understood without speech and 2) how gestures are understood when being inserted in syntactic slots of nouns and verbs. In each condition, 66 video clips were shown to 15 people (8 female, 7 male). The subjects were asked to watch the video clips and write down a lexical choice they considered best suited for the gesture. Altogether, 1980 lexical choices were elicited which built the basis for analyzing the comprehension of these gestures.

We found that gestures alone, i.e. without speech, were categorized as a unity combining an object and an action, in the majority of cases. Speaking in terms of Cognitive Grammar, they were conceptualized as profiling a thing *and* a process. However, in the context utterances, these gestures were understood differently. When occupying the syntactic position of nouns, the gestures were conceptualized as referring to an object. When being inserted in the syntactic position of verbs, they were conceptualized as designating an action. Based on these observations, we argue that basic cognitive abilities such as conceptual reification and sequential scanning underlie the conceptualization of gestures. Depending on the syntactic position adopted by a gesture, a manual movement can be conceived of as profiling a thing or a process. This means that in the context of a higher-level grammatical construction, a gesture can take noun-like properties by being a product of conceptual reification or adopt verb-like properties by being a product of sequential scanning.

With this focus, we aim to show that gestures same as language draw on similar cognitive abilities for the construal of meaning, providing further evidence for the argument that language is multimodal. Cognitive grammar thereby proves to be a theory, suitable for giving a unified account for what was recently described as "the human expressive ability", including gesture as well as spoken and signed language (Wilcox & Xavier, 2013).

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Multimodality of the Caused Motion Construction

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Background

Against the background that there is increasing recognition that gesture and language come under one single system (e.g. McNeill 1992) and further that gesture is influenced by the speaker's syntactic encoding of an event (e.g. Kita et al. 2007), there has been some exploration of the relation between grammar and gesture. In these studies, Construction Grammar offers an attractive framework, since its usage-based approach together with the idea of a construction as a dynamic gestalt could provide the possibility, or even the necessity, of including other modalities (besides the verbal one) as part of grammar, that is: part of a Construction. While a few other studies in this line are focusing on interaction (e.g. Feyaerts, et. al. 2013), modal particles (Schoonjans 2013), or particular lexical items (e.g. Zima submitted), this study will take a basic syntactic pattern – the Caused Motion Construction – as the starting point to examine to what extent the notion of construction can incorporate other modes, like gesture: starting with a prototypical category of constructions (Caused Motion) provides a clear starting point for analysis and the data exploration of 20 interviews showed that this construction tended to have highest gesture rate among all clause types.

Twenty videos of interviews in American English (each about 4-7 minutes long) were collected from a large multimodal corpus — the Red Hen video database (https://sites.google.com/site/distributedlittleredhen/home). All clauses were extracted out first and then were coded for the construction type (Caused Motion Construction or not), their gesture type (iconic gesture or others), gesture forms of iconic gestures (handedness, hand shape, orientation, location and movement), iconic gesture's modes of representation (acting, tracing, molding, embodying or any combination of the above), and the semantic contents that an iconic gesture represents in the Caused Motion Construction (Action, Path, Participant or any combination of the above). A pilot study showed that while the raw frequency of the Caused Motion Construction co-occurring with gestures which can represent part of this Construction type is almost 60 percent. Although it seems high, it is still not sufficient to conclude that this co-occurrence is frequent enough to be taken as a construction. However, the relative frequency (based on chi-square test) indicated that this Construction co-occurs with the iconic gesture much more frequently than expected by chance. That is, there is a collocation preference between the Caused Motion Construction and the accompanying iconic gesture.

In all, while many other studies report the raw frequency, it is proposed in this study that the collocation frequency of one particular gesture within some certain construction could provide a more practical criterion to examine the multimodality of this construction. In addition, as no one yet has given an operational definition for a multimodal construction, collocation preference is proposed here to be a criterion to define a multimodal construction.

Furthermore, it is also shown that most of those gestures in the Caused Motion Construction tended to show Action & Path or Path, which suggests that the accompanying gestures tend to profile the core of this Construction in many cases.

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Zima, E.. submitted. "He ran all the way from Montreal to Atlanta, that is when he stopped running and began walking"—a multimodal view on motion constructions.

Gestures as blends of basic conceptual archetypes: insights from a crowd-sourced perception study

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Background

Recent work has suggested that gestures can intersect with the grammar of speech in terms of their semantics (Müller et al. 2013, Ladewig 2012). In this contribution, I assess how gestures are capable of evoking the semantic domains that underlie nouns, verbs and adjectives, taking Langacker's (1987) notion of 'conceptual archetypes' as a starting point. Like prototypical nouns, gestures can profile the conceptual archetype THING (e.g., by making deictic reference to a concrete or abstract entity); like prototypical verbs, gestures can designate PROCESSUAL RELATIONSHIPS (e.g. by creating a mapping between the movement of the hand and the movement of some object); like prototypical adjectives, gestures can profile NON-PROCESSUAL RELATIONSHIPS between objects (THINGS) and their shape, size or quantity.

These semantic functions of gestures are, however, not always performed in isolation. By virtue of their holistic (non-segmental) organization, gestures are capable of evoking multiple conceptual archetypes simultaneously. The hands can, for instance, concomitantly refer to an object and depict its movement through space and/or its shape. This semantic multifunctionality has to date primarily been examined from a qualitative point of view, leaving a number of empirical questions open: do the hands *typically* perform more than one semantic function, or are such cases exceptional? What correlations and dependencies exist between the different semantic functions carried out by the hands?

In order to further elucidate these questions, I report on a comprehensive web-based gesture perception study. Approximately 450 video snippets containing spontaneous gestures (derived from the Bielefeld Speech and Gesture Alignment corpus; Lücking, et al. 2010) were viewed by a set of participants (n=18 per gesture), who judged whether they perceived the gesture to (1) make reference to an entity, (2) depict the size or shape of an entity, and/or (3) depict movement. These questions were answered on a seven point Likert scale (from 'certainly not' to 'certainly'). All gesture videos were presented with and without sound to a different set of participants (total n>800).

Correlational patterns in these judgments provide insights into the way different semantic archetypes cluster together in gestural expression. The most notable findings are that (1) most gestures that profile RELATIONSHIPS *also* profile THINGS (gestures are seldom perceived as isolated attributes); (2) gestures typically profile *either* spatial *or* non-spatial RELATIONSHIPS; (3) on the level of abstraction at which the judgments were made, the interpretation of the gestures' semantic function was relatively independent of the verbal context (with some noteworthy exceptions). I conclude by linking these empirical findings back to the discussion on gestures' relation to grammar and a view of gestures as symbolic units of a variably schematic nature (cf. Wilcox & Xavier, 2013).

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Forum for the Empirical Study of Talmyan Theory (FESTT)

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Background

Leonard Talmy's cognitive semantics sees language as encompassing certain major systems. Centrally, there is the set of "schematic systems", which includes configurational structure, location of perspective point, distribution of attention, force dynamics, and cognitive state. In another set, the open-class system contrasts with and complements the closed-class system. The conceptual system underlying events of motion and related events is the basis for a typology: languages mainly represent such events with either a verb-framed or a satellite-framed pattern. The systems are as follows:

The cognitive system of language:

1) The schematic system of configurational structure
2) The schematic system of perspective
3) The schematic system of attention
4) The schematic system of force dynamics
5) The schematic system of cognitive state
6) The framework for event structure

And the "overlapping systems model" of cognitive organization relates such systems in language to counterparts found in other cognitive domains such as perception, motor control, and affect. Further systems operate under this larger aegis, including those for fictive motion and fictivity in general; the Figure/Ground distinction; the relating and integrating of events; and the resolution of semantic conflict. A particular feature of Talmy's theoretical framework is its openness. It readily leaves room for other researchers to refine, extend, and interconnect its systems, as well as to add to them.

This theme session aims to bring together researchers using empirical methods working on any aspect of Talmy's cognitive semantics, so as to develop its systems and so advance our understanding of how the mind works through the window of language. This session contains 8 presentations. It will start with Talmy's elaboration on relating language to other systems. While the remaining 7 will be on his typology, cognitive state, attention and causation. The list that follows are authors and titles ordered in the sequence of presentation.

Contributors

Leonard Talmy. University at Buffalo, SUNY. Relating Language to Other Cognitive Systems: An Overview.

Günther Lampert. Johannes Gutenberg-University Mainz. Germany. Sense Activation Triggering in English Epistentials.

Martina Lampert. Johannes Gutenberg-University Mainz. Germany. Crossing Modalities: A Cognitive Semantics Perspective on Quoting

Thomas Li, Mengmin Xu, and Alan Cienki. Beihang University and UV Amsterdam. The Linguistic Representations of Agency in Causal Chains.

Hanna Batoréo and Lilian Ferrari. Universidade Aberta, Lisbon, Portugal and Federal University of Rio de Janeiro, Brazil. Perspective, Events of Motion and Talmyan Typology

Yiyun Liao and Thomas Li. Beihang University. On the Lexicalization Pattern of the Event of Temporal Contouring.

Tianyu Li. The University of Essex. Typology for Chinese: A Corpus-based Study on Serial Verb Constructions.

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Relating Language to Other Cognitive Systems: An Overview

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This article proposes how language relates structurally and evolutionarily to cognition. It heuristically divides cognition into cognitive systems and the organizing factors that structure them. The general finding is that cognitive systems share these structural properties to different degrees. This is termed the "overlapping systems model of cognitive organization". The specific finding is that the cognitive system of language shares many structural properties with the cognitive systems of visual perception, of somatosensory perception and motor control, and of understanding, but shares few structural properties with those of affect and of culture.

Sense activation triggering in English epistentials: Attention distribution, contextual modulation of meaning, and categorization issues

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Background

Drawing on an as yet unpublished version of Leonard Talmy's forthcoming *The Attention System of Language* and building on a series of previous studies (G. Lampert 2011, 2013, M. Lampert & G. Lampert 2013), this paper (see G. Lampert 2015) addresses the interrelation of attention distribution, contextual modulation of meaning, and categorization issues in epistemics, a comparatively neglected research area in Cognitive Semantics. Talmy (2006, 2015) considers epistemics a subsystem of a larger schematic system of language referred to as Cognitive State, covering sentient entities' states of knowledge. It includes the categories of evidentiality and epistemic modality, which, though conceptually distinct, are (in English) often instantiated by so-called *epistentials* (Faller 2002)—items that, by default, syncretistically incorporate both evidential and epistemic meaning components, but not to the same degree of salience (e.g., adverbs like *obviously, apparently*, *evidently* and the modal verbs *must, may,* and *might*).

Adopting a corpus-based approach, the paper will investigate how the default salience levels of the evidential and the epistemic semantic components in such epistentials can be raised, lowered, or even inhibited under the impact of immediately adjacent items that themselves associate evidential or epistemic semantic components. The attentional effects to be described are all asymmetric: they constitute a class of causal attention factors where, following Talmy, the first item in the combination will be considered a *trigger*, the second the *target* of attention. In each of the cases to be analyzed in detail in the paper the trigger morpheme is seen to strengthen the less salient meaning component of the target morpheme, an effect that may even leas to a re-categorization of the target; the epistential item then changes into an evidential or an epistemic marker. The combinations to be analyzed as implementations of sense activation triggering will include: cross-combinations of morphemes with an evidential or an epistemic core meaning (adverbs plus predicatively construed adjectives such as *it is obviously certain* or *it is certainly obvious*); co-constructions of items having an epistemic or evidential core meaning with other or even the same members of their own category (e.g.*, evidently obvious, obviously obvious, probably certain*, etc.), and combinations of epistential adverbs with 'epistential' *must* (e.g., *obviously must, certainly must).*

In general terms, the paper is meant to lend support to the assumption that linking up (lexical) semantics with the attention system of language will not only contribute to solving long-standing semantic problems, but result in an integration of cognitive systems in language, and, concomitantly, lead to a much desired (re-)contextualization of Talmyan Cognitive Semantics.

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Crossing modalities: A Cognitive Semantics Perspective on Quoting

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Background

This follow up-study continues my line of argument to further contribute insights into quoting as an attention- and modality-sensitive phenomenon (see, e.g., Lampert 2013, 2014, forthcoming), now looking at the interface of speech and writing. A cross-section of quotations from the 'corpus' of videotaped US presidential inaugurals has been scrutinized in an attempt to determine the relative share of mode-specific strategies (verbal, vocal, gestural) drawn on to index another voice in their oral performances of (pre-)scripted texts. In formal contexts of such exceptional public import, speakers would reasonably be expected to -- somehow -- medially 'translate' quotations, which makes this ambivalent discourse an interesting arena for multimodal(ity) research: Would orators adhere to the model of citation conventionalized in academia and routinely map the quotations one-to-one onto the vocal-auditory and visual-manual modes of expression available to speech? That is, would the figural delimiters unequivocally priming a quotation in print systematically correspond to distinctive prosodic and gestural parameters, 'animating' the other voice?

Envisaging an integrative re-analysis of (the) quotative construction(s), Leonard Talmy's (2007a, forthcoming) attention framework has proven an excellent basis to also accommodate their relevant multimodal concomitants: Verbal introducers to quotations represent metalinguistic devices, lexicalized to selectively redirect some attention from a quote's referential content to concomitants closely associated with it, thus establishing addressee awareness of its status as a quotation. In face-to-face interaction, such prompts are found to functionalize medial options of speech, that is, quoters will typically prime the quote through distinctive prosody and gestures, highlighting visual, auditory, and/or kinetic properties of a previous (imagined) linguistic event and at the same time conveying their (affective) stance toward the quote(e). In the written medium, quotative constructions feature devices of visual representation: typically, figural primes to precisely demarcate the beginning and end of a verbatim quote and verbal prompts, including an obligatory reference to the exact source, to express quoters' (attitudinal) stance toward the quote(e). Against these two models, inaugurals are found to privilege the verbal mode to acknowledge the other voice, and whenever such categorical discrimination is judged significant, eminent speakers exclusively rely on verbal prompts, approximating the academic model of citation though without adhering to the verbatim criterion. Contrary, however, to a widely held claim, the figural delimiters unequivocally priming a quotation in print are not routinely 'translated' into distinctive prosodic parameters (such as pauses, intensity, pitch), and gesturing almost strictly falls short of serving a quote-indexing function; or the metalinguistic status of a quotation is even suppressed altogether, ultimately generating cases of plagiarism.

This survey of quoting in distinguished political speeches appears to in fact invoke a more fundamental cognitive principle underlying the 'great divide' between the written and spoken modalities, corroborating Talmy's (2007b) introspective analysis. Critical differences in quotative practices ultimately emerge from their respective production and reception circumstances that in turn determine the profile of quotative constructions: The discrete and digital verbal channel displays its evolutionary advantage over the realizational options of the speeches' actual medium of delivery, confined to transient and gradient parameters of representation; despite their permanence through video recording and transcription, the 'imprecise' visual and acoustic modes are -- perhaps institutionally and/or routinely -- 'suppressed' in the context of pivotal messages, suggesting that analog representations lack the necessary perceptual salience to meet the ritualistic and/or legalistic demands of the inaugurals' superior cultural significance.

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The Linguistic Representations of Agency in Causal Chains

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Background
This article examines a few Talmyan claims (Talmy 2000:471) about the morphosyntactic features of agency in causal situations. Talmy proposes a basic agentive construction SR RESULTed FROM SA as well as a distinction between Agent and Author for the semantic organization of agency. Narratives were elicited from a set of 20 video clips of real situations; 50 native speakers of Mandarin Chinese were interviewed to set up a closed corpus of 1000 agentive causal sentences. They indicate that Talmy's claims about agency can be supported, while his claims about the syntactic structures cannot. This article further proposes a causal model for the semantic organization of agency. It is concluded that there does not exist a universal pattern for representing agentive situations, and the semantic structure of agency can be determined using the causal model of agency.

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Perspective, Events of Motion and Talmyan Typology: What do EP and BP data teach us on verb-framed and satellite-framed patterns in Portuguese?

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Background

As proposed in Talmy (2000) and defended also for Portuguese (cf. Batoréo 2014 a, b; Batoréo & Ferrari in press), we postulate that human cognition is not only rooted in the human body, but also inherently viewpointed in language (cf. Talmy 2000: 68, 216).

In the present paper we shall discuss the schematic system of typological perspectivization proposed by Talmy when operating in the conceptual system underlying events of motion, as fundamented in the typology of verb-framed and satellite-framed patterns and languages. According to Talmy (1985), verbal lexicalization patterns indicate a typology in which most languages can be categorized as either *verb-framed* and *low-manner* languages, such as Spanish, Hebrew, and Turkish, or *satellite-framed* and *high-manner* languages, such as English and German, depending on the range of meaning their motion verbs typically express. As Spanish and other Romance languages, and contrary to Slavic or Germanic families of tongues, Portuguese is traditionally classified as a verb-framed language (Batoréo 2000) because it is in the verb that it expresses the direction/path of motion (i. e., conflating the motion and the path), typically with minimal indication of the manner eventually expressed by a satellite as in: '*O Pedro atravessou a ponte de carro*' (Pedro + [went/came across] + the bridge + by car/ driving), corresponding to English: '*Pedro drove across the bridge'* (Pedro + [went/came by car] + across the bridge).

We shall challenge the assumption of Portuguese as a verb-framed language (see the broader typological discussion in Matellán & Mateu 2008) showing with the Portuguese corpus data (both EP and BP, cf. *Linguateca*) that (i) both types of patterns occur in Portuguese, and that (ii) some differences can be observed in the type of pattern preferred in one of the two main varieties of Portuguese. The data show that the verb-framed pattern is stronger in BP than in EP, as in the case of fictive motion verbs '*beirar*' or '*orlar*' (*to edge, to go sideway*), which do not occur in EP, or in the case of '*afundar*' (*to sink*), which occurs both in BP and EP but in EP it simultaneously co-occurs with not conflated construction '*ir ao fundo'* (*to sink, to go deep down, till the end*). The simultaneous occurrence of the verb-framed pattern in BP and satellite-framed pattern in EP can be illustrated in the following example: '*A estrada vai beirando o rio*' (BP but not EP), as contrasted with '*A estrada vai pela beira do rio'* (PE), corresponding to '*The road margins/ borders/ edges/ goes sideway to the river'*.

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On the lexicalization pattern of the event of temporal contouring

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Background

This paper explores the typological patterns of events of temporal contouring in Mandarin Chinese. In his proposal of verb-framed languages and satellite-framed languages, Talmy claims that Mandarin Chinese belongs to the latter. Talmy's dichotomy of language typology is based on his research of macro-event, which further includes the following 5 sub-type of events: motion events, event of state change, event of temporal contouring, event of correlation, and event of realization. But the majority of the research on the verification of the typological status of mandarin Chinese is based on motion events. Research on temporal contouring is scarce. The current research takes the temporal contouring events containing aspect marker zhe as our research target and employs the corpora CCL of Peking University. Two aspectual meanings of zhe are discovered through data analysis and most of the data turn to be V-zhe constructions. The core schema ASPECT is exclusively mapped onto zhe which belongs to satellites in Talmyan term. The results lend support to the conclusion that in modern Chinese temporal contouring exhibits satellite-framed language, but as a whole, mandarin Chinese might belong to a complementary type.

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Typology for Chinese: A Corpus-based Study on Serial Verb Construction[5]

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Cognitive typology starts from investigation on motion event expression (L. Talmy, 2000), which is incarnated by serial verb construction (SVC in short) in Mandarin Chinese. This study focuses on diachronic statistical analysis on SVC, in order to explore the historical origin for the typological characteristic of modern Chinese.

Previous synchronic studies have claimed an equipollently-framed characteristic for modern Chinese (L. Chen 2005; L. Chen & Guo 2009), and this leaves diachronic domain as the research gap. To be specific, this gap entails such research questions: I. What is the historical origin for equipollently-framed characteristic of modern Chinese? II. What is the refinement of detailed typological characteristics for ancient Chinese within each developmental period, since ancient Chinese evolves through different historical stages (袁行霈, 1999)? The first question leads to further two detailed ones, which are the way to express motion event in ancient Chinese as well as the pragmatic model of that expression. Those would be the research questions for this study to address.

In order to investigate these questions, this study collects data on motion event expression and builds up a small-scaled corpus. This corpus is constituted from texts of the most representative genres within the last stage of Chinese evolution, as well as translated modern versions of those texts. The segmentation software of Institute of Computing Technology, Chinese Lexical Analysis System (ICTCLAS for short) is used to label and to classify motion event expressions within those texts. This classification displays that it is totally different for ancient Chinese and modern Chinese to choose between single verbs and SVC for motion event expression, a result that has been summarized into the forms of table and figure in this study.

It is discovered that while modern Chinese uses SVC as the main method to express motion event, its ancient counterpart adopts single motion verbs more frequently for the same purpose. What's more, it is calculated that manner verb goes roughly equal of the percentage with path verb on pragmatic usage for ancient Chinese, and this indicates the equal morphosyntactic status for single motion verbs in ancient Chinese within its last evolutionary stage. The equal morphosyntactic status of manner verb and path verb determines the equipollently-framed characteristic for this ancient language, a characteristic once inherited further, would result in the equipollently-framed typology for modern Chinese.

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[5] It is claimed that China Scholarship Council funds this research.

Language and Music: Parallels and Intersections

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Background

Cognitive Linguistics' central tenet is that language is not an autonomous mental module, but rather is built from the cognitive mechanisms humans use for other aspects of 'getting on in the world'. Thus we should find parallels and identities with other uniquely human activities that share aspects of their nature with Language. A particularly good candidate is music, which is universal in human culture and, like language, involves bodily activity, auditory perception and social intercourse.

Over the past few years cognitive psychologists have begun exploring the relationship between language and music, although fewer linguists have entered the realm. The notable exception is the foundational work by (Lerdahl & Jackendoff 1983)) on perceptual grouping and rhythmic mechanisms in music based on contemporary phonological theory.

Cognitive psychologists who have looked at music and language include (Zbikowski 2002, Patel 2008, Snyder, 2000), while those who have studied more general issues of music perception and production include (Levitin 2006, Huron, 2006). More recently linguists, including (Nathan 2008, Donegan & Nathan 2014) and (Chatzikyriakidis 2013) have looked at identities between rhythm in music and language.

We propose a theme session to further explore this growing research area. Papers will include several on the metaphors that we use to understand and experience music, both on a fundamental and on a genre-specific (jazz) level. A second theme is relationships and identities between cognitive processing of aspects of music and language, including experimental studies. The organizer will provide commentary and a summary.

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Metaphors for MUSIC: Different levels of conceptualization

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Background

Research into the conceptualization of music has widely acknowledged that music is largely understood via conceptual metaphor (Johnson & Larson 2003, Zbikowski 1998, 2002, Jandausch 2012, to name just a few). Music moves and moves us, melodies fall and rise, chords progress and two motives in a sonata can seem like two opposing warriors fighting each other. As can be seen from the scope of these examples already, the metaphorization of the concept of music is highly complex and calls for a more fine-grained analysis in terms of different levels of metaphoricity.

Based on an analysis of texts taken from newspaper concert reviews and academic music analyses, we want to show that metaphor for music operates on at least two levels. At a *descriptive* level, metaphor is used to conceptualize pitch, harmonic relations and musical structure in general (e.g. A-flat major is the closest possible to A major). These mainly spatial notions of music are highly conventional and thus their metaphorical status often remains unnoticed; they are thought to be "literally true for music" (Guck 1991: 2). In turn, at the *interpretative* level, expressions make reference to how the musical structure is interpreted in terms of its effects or in terms of an extra-musical narrative (e.g., interpreting an unconventional sequence of chords as a "modernist eruption").

Whereas musical structure is something that can be described rather objectively, at least to some extent, the interpretation of musical structure is highly subjective. Furthermore, as metaphors on the descriptive level give access to basic musical concepts they tend to be more conventionalized, whereas interpretative metaphors tend to be novel cases of metaphor and more context-specific. Moreover and due to their high context specificity, interpretative metaphors are often explicitly marked by metaphor markers and extended over the discourse.

We believe that this multi-level analytical apparatus advances research on metaphor and music insofar as it (i) distinguishes musical description from musical interpretation but also (ii) provides unity to these different analyses of metaphor in music. For further research, it would be interesting to find out how these findings connect to multimodal studies of musical organization.

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Erotic Metaphors Jazz Musicians Play By

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Background

Lakoff and Johnson (2003) have shown us that we **live** by metaphors. This paper argues that jazz musicians **play** by erotic metaphors. The vocabulary of sex (source domain) was originally extended to describe elements of jazz (the target domain). Many of the terms of the jargon of jazz were sex-related terms in (primarily) African American slang: *groove, funk, mojo, cat, honky-tonk, jelly roll, tight, pocket,* etc. (Powell, 1997). Even the word *jazz* itself plausibly has sexual origins that go back through Creole patois to African languages (Harper, 2001-2013). However, many of these terms have become dead metaphors; most musicians and listeners today do not think of, or even know about, the original senses of the terms.

The origin of jazz itself is sex-related. Among the locales where jazz developed were the brothels of Storyville, the red light district of New Orleans from 1897 to 1917. Famous jazz musicians who played in these brothels include Louis Armstrong, Joe "King" Oliver, and "Jelly Roll" Morton (Rolf, 2007). "Jelly Roll" itself is a sex-related term that shows up in jazz and blues songs such as "I Ain't Gonna Give Nobody None of My Jelly Roll," which has been recorded by numerous artists. Moreover, as jazz spread, it kept its sexual orientation: "In their relations with women, many jazzmen were conditioned by their high exposure to prostitutes, dancing girls, and other women who functioned in northern entertainment centers as commodified sex objects" (Peretti, 1994).

Many titles of jazz pieces contain sex-related words: "Sugar" by Stanley Turrentine, "Honeydripper" and "Got My Mojo Workin'" by Jimmy Smith, "Sonnymoon for Two" by Sonny Rollins, "The Vamp" by Hank Mobley, as well as "Love for Sale" performed by various artists. Some tunes mimic elements related to sex or sexual attractiveness, e.g. "Hazel's Hips" by Oscar Brown Junior. Some just "sound sexy," e.g. "Europa" by Gato Barbieri. There are also jazz albums that have sexually provocative covers.

Some jazz performances include a crescendo which in some respects resembles the stages leading to an orgasm, e.g. "The Catbird Seat" by the Mitchell-Ruff Trio. Arguably, there is a motivation for extending sex vocabulary into the domain of jazz in that the pleasures of sex can be compared to the pleasures of jazz performance, i.e., playing 'in the groove' or 'in the pocket'. (Both *groove* and *pocket* are sex-related terms.)

In sum, this presentation uses the framework of Lakoff and Johnson (2003) to argue that erotic metaphors (dead or alive) permeate the history of jazz, titles of jazz pieces, album covers, and even how jazz is played. Videos of various pieces mentioned above will be played during the presentation.

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Speaking Volumes

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Background

As a mass-count noun volume has a meaning of 'the amount of space that a substance or object occupies, or that is enclosed within a container' which originated in Middle English and Old French (Oxford Dictionaries Online, 2014). The more specific meaning of volume as amount or quantity of sound is only first recorded in English in Byron's tragedy Werner (1822). In Act V, Scene 1, lines 130-135, Count Siegendorf relates how,

> When just as the artillery ceased, and paused
> The music, and the crowd embraced in lieu
> Of shouting, I heard in a deep, low voice,
> Distinct and keener far upon my ear
> Than the late cannon's volume, this word—"Werner!"
>
> (Byron 2007: online)

Byron's novel poetic concept of the sound of cannon as amounts or quantities of sound is metonymical. The metonym maps spatial dimensions ('deep', 'low', 'volume') with qualitative aspects of the aural reception of the utterance "Werner!". The metonymical mapping of sound as volumetric appears highly appropriate and has now become conventionalised. In everyday speech and thought we talk about and control the 'volume' of sound on our televisions, computers and handheld devices.

Suzanne Langer saw the potential to reinvigorate the figurative meaning of volume as amounts of sound in order to explain the phenomenology of music, that 'experience of time [which] involves more properties than 'length' [...] for its passages have also what I can only call, metaphorically, volume' (Langer 1953: 112-113; original emphasis). Gradations of volume in music, or changes in musical dynamics, make a fundamental contribution to our experience of patterns of tension and release in a musical work. Yet a theory of musical volume raises at least three potential problems. Firstly, stepped or graded dynamics as a musical parameter have a low status. They are poorly theorized from an analytical perspective although they are beginning to receive more critical attention in performance and psychoacoustic research. Secondly, there are difficulties with the measurement of musical dynamics. The volume of a sound is a complex phenomenon that is dependent on intensity, range of frequency and combination of sounds, as well as environmental interference and the acuteness of the individual perceiver's hearing at any given time (Pierce, 1992). Dynamics signs such as *piano* (quiet) or *forte* (loud) are only superficially understood to have corresponding meanings in different contexts; and processual instructions such as *crescendo* (getting louder) or *diminuendo* (getting softer) are rarely performed as simple additive processes. Thirdly, the lack of a theory of musical dynamics carries over into a lack of hermeneutic strategies for interpreting dynamic change although embodied associations between volume and spatial proximity have been strongly linked to physiological and emotional responses based on ecological signals (Granot & Eitan, 2011: 241).

This paper explores the theoretical and methodological problems of understanding musical volume and focuses on György Ligeti's organ work *Volumina* (1961-2; rev.1965) as a case study. In doing so, it reveals some of the cultural constructs that inform our cognition of musical volumes as amounts of sound.

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Common Resources in the Structural Processing of Language and Music

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In two experiments, we examined the "shared structural integration resource" hypothesis (SSIRH; Patel, 2003). SSIRH states that the structural processing of language and music involves both domain-specific and domain-shared components. The domain-specific component is hypothesized to be involved in storage of mental representations of units and grammar rules of each domain. In contrast, the domain-shared component controls the activation and integration of these representations during syntactic processing. SSIRH predicts that when language and music are processed simultaneously, and both language and music exhibit high structural complexity, there will be interference in the domain-shared component. Such interference would produce a super-additive interaction between the structural complexity in linguistic and musical domains. Previous studies have used the written modality for the linguistic stimuli and an offline measure of processing load (Fedorenko, Patel, Casasanto, Winawer, & Gibson 2009; Slevc, Rosenberg, & Patel 2009). However, an intra-modal design is an important test of the SSIRH because natural speech contains additional prosodic cues that could influence the process of online syntactic integration. Furthermore, the presentation of both domains in the auditory modality could increase the level of difficulty of performing linguistic and musical tasks simultaneously due to additional attention capacity factors. Our two experiments used a self-paced listening task to provide response times as a test of online processing of speech in the presence of music. Structural complexity in language was manipulated by comparing complex sentences using (relatively simple) subject-extracted relative clauses with (relatively complex) object-extracted relative clauses. Musical structural complexity was manipulated by comparing in-key chord sequences, out-of-key chord sequences and acoustically deviant but not structurally complex chord sequences. In Experiment 1, participants completed the online task, and answered questions relating to the speech after each sentence. The listening time data did not show the predicted interaction between linguistic and musical complexity. Given the intra-modal nature of the task, low-level auditory attentional filtering might explain the result. Therefore, in Experiment 2, questions related to either the sentence or the music, so that participants were required to divide attention between the two domains rather than focus attention only on speech. In these conditions, the predicted interaction between linguistic and musical structural complexities was obtained. Participants required significantly more time to understand the object-extracted relative clause sentences compared to subject-extracted relative clause sentences and this delay was super-additively prolonged when the simultaneously presented music contained structurally unexpected out-of-key chords compared to the two structurally simple types of music. The difference in the pattern of results between the syntactically complex music condition and the acoustically deviant but structurally simple music condition suggests that the interference between language and music was not due to attentional shifts away from the linguistic task. Instead, it was caused by exhaustion of limited processing resources in the condition in which both domains had higher cognitive demands. In contrast to cross-modal studies demonstrating domain interference when music is task irrelevant, the present results suggest that in order for such interference to emerge in intra-modal presentation, attention must be divided between language and music. These findings confirmed the expectation of additional attention capacity limitations introduced by the single modality presentation. They also provide further evidence that music parsing is dependent on attentional factors, especially when cognitive demands are high and additional verbal information is presented in the auditory modality. Additionally, the results from the present study support the prediction of the SSIRH in Bulgarian language and are in line with the claim that music and language share common resources in the online structural integration process. Findings such as these and evidence from other studies showing interactions between complexity of linguistic and arithmetic tasks contradict domain-specific accounts of human cognition. They support a more general account of cognition in which common mechanisms are involved in the integration of preceding elements in the structure of any rule-governed system.

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Unexpected Accompaniment: Cognitive Mechanisms for Language-Music Mismatch in Time

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Background

Extensive research has been carried out for the role played by anticipation in human cognition (Brône 2012; Coulson 2005; Huron 2006). These studies, though often employing the terms "anticipation" and "expectation" interchangeably, emphasize only the temporal sequentiality between elements taking place at different points of time, a relation parallel to the progression of time (Fig. 1). While the focus on anticipation brings deep insight, in modes of communication where simultaneous events are possible, there exists a similar but distinct relation that holds between elements simultaneously represented in time. This is expectation, a relation perpendicular to the progression of time. A case in point can be found in the first act of Richard Wagner's music drama *Siegfried*, where Mime stresses in words how much love he has for Siegfried, but where the leitmotif representing Mime's complaint prevails in the accompanying music (Donington 1974). Assisted by contextual knowledge, the listener is able to understand out of this mismatch that Mime is being pretentious and that the music reveals his true evil intention. Intuitive as it seems, such understanding actually involves complex cognitive mechanisms, which, I argue, hinge on expectation. The listener would, for instance, normally expect Mime's words and music to "support" each other, a fact responsible for the mismatch being unexpected. Though ubiquitous in our daily life and indispensable for our understanding of the most ordinary, the relation of expectation has hardly been recognized let alone analyzed in the literature, except a cursory mention in a recent study (Hsu and Su 2014). Further investigation is therefore needed to bridge the gap.

In view of existing theories' incapability of accommodating the complex nature of cross-modal relations in time, I propose the Multidimensional Intermodal Integration Model (MIIM), which captures in a single unified framework meanings expressed in different modes, the progression of time, conceptual distances between mental spaces, processes of conceptual integration and disintegration (Fauconnier and Turner 2002), etc. Analyzed for illustration is the above *Siegfried* passage. Upon language-music mismatch, the conceptual distance between Mime's words and music increases, imposing tension on the vital relation that holds them together—Simultaneity—according to which it is the temporal juxtaposition of the language and the music that allows the listener to understand that what s/he is listening to is a single piece (Hsu and Su 2014) and thus to expect the language and the music to match. Meanwhile, elements from the language and the music inputs, as well as the unexpected mismatch, are projected into a blend, where new meanings emerge, mismatch is made sense of, and emotional effects are evoked, facilitating the listener's understanding of the composer's "intention." The balance between these interwoven cognitive operations oscillates from one point of time to the next, contributing to the dynamic meaningfulness of the entire passage.

The analysis of the *Siegfried* passage demonstrates the centrality of the hitherto overlooked relation of expectation in our understanding of meanings communicated through multiple modes, and that, much like unfulfilled anticipation, unfulfilled expectation also yields strong emotional effects. The interplay of the various cognitive operations further highlights the analytical power of MIIM, shedding light on research on other multimodal means of communication where simultaneous events are possible.

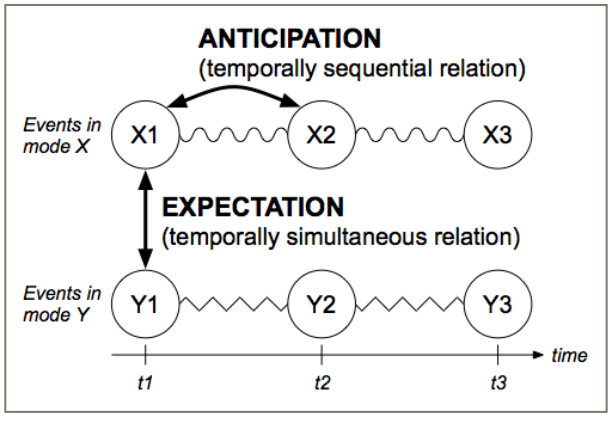

Fig. 1. Expectation and anticipation.

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Listening for categories: Eco-neurological approaches to engaging with music

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Background

Approaches to music perception and cognition have hitherto largely understood these activities along information-processing lines, in which 'bottom-up' raw sonic data is interpreted in 'top-down' fashion. Eric Clarke's *Ways of Listening* (2005) proposes a new ecological approach to music perception, in which the perceiver's relationship to music is considered as part of a broader understanding of organisms relating to environments. In this paper, I explore some implications that follow from Clarke's approach as well as briefly surveying literature from related areas which similarly frames perception and musicking as part of a fluid and dynamic aural environment.

Clarke, drawing from James Gibson's concept of affordances, argues that the ecological approach eliminates a number of problems arising from what he terms 'the standard information-processing account' of music perception (2005, 15). Grounded in first generation theories of music cognition, these problems consist of a theoretical dependence on purported mental representations, a tendency towards abstraction (resulting in a disconnect between perception and action), and a misplaced emphasis (to his mind) on a hierarchy from 'bottom-up' data to progressively higher levels of cognition and categorisation. A recent body of literature from cognitive linguistics and neuroscience proposes alternative views that challenge this hierarchical-taxonomic understanding of categorisation processes as well as the traditional 'mind as computer' model of first generation cognitive science.

In the course of this exploration, I also consider other 'ways of listening, including Thomas Clifton's phenomenological account (1983) and Pierre Schaeffer's auditory theories and how these various perspectives might be integrated into an ecological approach. The topic of listening (Ihde 2007; Patel 2008; Gjerdingen and Perrott 2008; Tuuri and Eerola 2012; Hendy 2014; Taylor 2014), I will argue, offers opportunities to engage with the various ways in which humans categorise music as 'musical,' and the peculiar paradox whereby the categories of Western art music (with a comparatively short life-span in the broad history of human musicking) have until quite recently constituted the dominant model in music aesthetics. To challenge this orthodoxy necessitates reconsidering the nature of musical categories to determine what Clarke's new ecology of music may offer for listeners, musicologists, and other interested parties.

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Effects of Persian Language Rhythm on Iranian Traditional Instrumental Non-metric Music Rhythm

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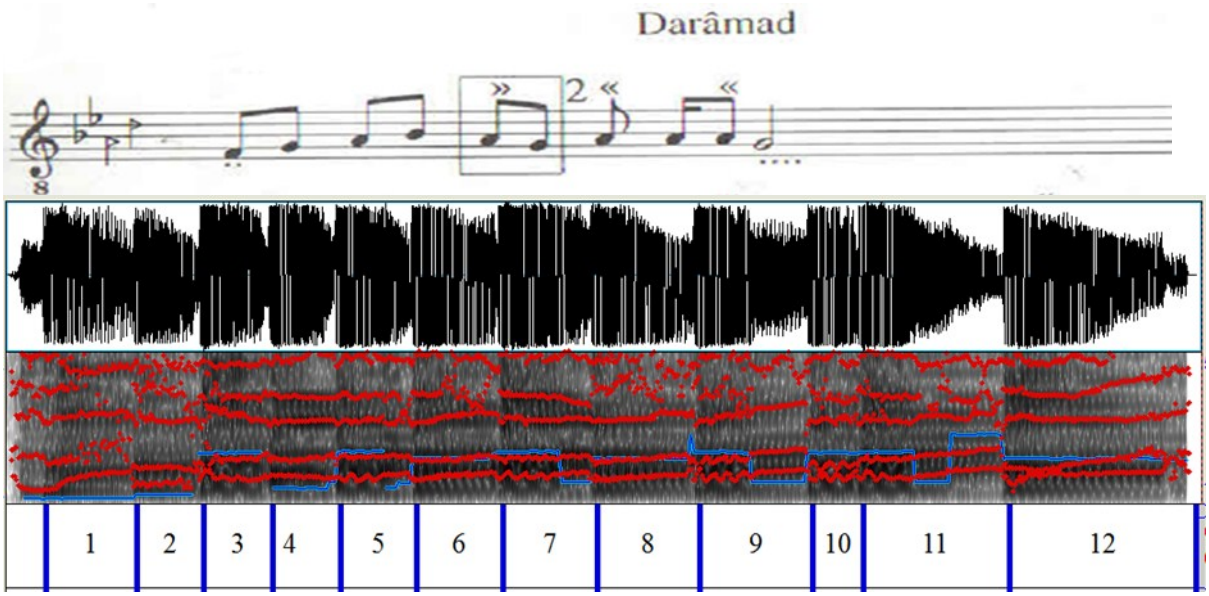
Background

Similarities and differences between language and music is a recent issue that attracts the attention of linguists and musicologists. They claimed that the structure of music of a culture is influenced by the prosodic features of spoken language of that culture. Rhythm is one of the most important shared features between these two domains. Grabe and Low (2002) introduced nPVI, normalized Pairwise Variability Index, to determine the rhythmic class of languages. The nPVI computes the absolute value of the difference between each successive pair of durations in a sequence. As in nPVI normalization would normalize for cross cultural differences, Patel (2010) used this method to compare the linguistic and musical rhythm of some cultures and he concluded that the linguistic rhythm of each culture influences the musical rhythm of that culture.

$$\text{nPVI} = \frac{100}{m-1} \times \sum_{k=1}^{m-1} \left| \frac{d_k - d_{k+1}}{\frac{d_k + d_{k+1}}{2}} \right|$$

Where *m* is the number of vocalic intervals in an utterance or duration of musical tones and d_k is the duration of the kth interval.

In this research nPVI is used to show the influence of Persian language on Iranian traditional non-metric music. Thus, four Persian native speakers read 40 declarative Persian sentences in a silent room. These sentences recorded by Shore Microphone in Praat software. Also 40 music sentences of Iranian traditional instrumental non-metric music which belong to great Iranian composers have been chosen. Then variability of vowels in Persian language and variability of music tones in Iranian traditional music are measured by nPVI. At last the mean value of Persian linguistic and musical nPVI is compared to the existed nPVI of other cultures.



Fig(1) An example of Iranian traditional instrumental non-metric music note and its TextGrid

Results of this study demonstrate that Persian language is among syllable-timed languages and nPVI of Persian language and Iranian traditional instrumental non-metric music do not differ so much. Hence, it can be concluded that Iranian traditional instrumental non-metric rhythm reflects Persian language rhythm.

Key Words: language rhythm, music rhythm, nPVI, syllable-timed

Meaning Making in Multimodal Discourse and its relevance for Cognitive Linguistic Theory

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Background

The theme session seeks to work out some of the implications for core concepts of cognitive linguistic theory that studying the meaning of language in use raises. The fact that for a very large part discourses are inherently multimodal – be they verbal and gestural, verbal and pictorial, or verbal in a multimedia context – affects fundamental assumptions of a cognitive linguistic approach to meaning (cf. Kappelhoff and Mueller 2011, Fabiszak 2014). Examples are:

(a) meaning as conceptualization
(b) metaphor and metonymy as cognitive procedures that motivate meaning
(c) image schemas and semantic frames as conceptual meaning structures
(d) meaning as embodied

We believe that the analysis of multimodal discourse sheds new light on them. Cienki (2012) for instance has suggested that one consequence of studying language in its varying contexts of use is that cognitive linguists should consider language itself as variably multimodal. The overall goal of the session is to offer suggestions for a refined understanding of some of the core assumptions of cognitive linguistics from the point of view of studying the meaning of language in a multimodal context of use. In doing this, the theme session will also contribute to a refined cognitive-linguistic understanding of multimodal discourse. We have selected two research areas which address aspects of meaning making in multimodal discourse that appear to imply treatment and reflection of some of the aspects of cognitive-linguistic assumptions on meaning mentioned above:

(1) Multimodal interaction and alignment
(2) Dynamics of meaning making in multimodal discourse

Analyzing the meaning of words, gestures or pictures in multimodal discourse raises the question of how to mediate between meaning as individual conceptual structure and as interactively achieved process. Research on alignment and interaction indicates that there is a tight coordination and negotiation of meaning (Garrod & Pickering 2004, Bergman & Kopp 2012, Karpiński, Klessa & Czoska 2014). What are the consequences for the cognitive linguistic understanding of meaning as conceptualization? What are the units of analysis beyond words? How can similarity of meaning along a discourse and across different modalities be determined? We know that metaphor and metonymy play out in words as much as in gestures and images, yet does this affect cognitive linguistic views on those mechanisms? What about image schemas and semantic frames as conceptual structures? Do they apply to meaning making in multimodal discourse? And if yes, how? What does it mean to speak of meaning as inherently embodied, when analyzing meaning of multimodal discourses? The theme session will address these issues in two blocks. The first one will focus on multimodal interaction and alignment and the second one will address processes of multimodal meaning making. We encourage contributions that present sound empirical research on meaning making in multimodal discourse that spell out theoretical consequences for the involved conceptual structures and/or processes.

Contributors

(1) Multimodal interaction and alignment

Gert Brône and Bert Oben. KU Leuven. Multimodal alignment is dynamic: evidence from cross recurrence methods.
Ewa Jarmołowicz and Maciej Karpiński. AMU Poznań. Communicative accommodation in the intercultural environment of German - Polish borderland.
Konrad Juszczyk. AMU Poznań. Patterns of mulitmodal meaning making in career clean coaching sessions.
Kurt Feyaerts und Bert Oben. KU Leuven. Mimicry behaviour as a function of verbal and physiological markers. Reports from an interdisciplinary experimental study.

(2) Dynamics of meaning making in multimodal discourse

Dorothea Horst. EUV Frankfurt (Oder). Subtle messages of campaign commercials.
Małgorzata Fabiszak. AMU Poznań. Multimodal discourses of collective memory.
Matteo Fuoli. Lund University. Trust dynamics in multimodal corporate discourse: the role of metaphor.
Anna Jelec. AMU Poznań. When embodied concepts are literally embodied. Multimodality and metaphor in abstract concept descriptions of blind children.

Cornelia Müller and Benjamin Marienfeld. EUV Frankfurt (Oder). Feeling for speaking and the dynamics of multimodal discourse.
Chris Hart. Lancaster University. Toward a cross-modal semantic annotation framework: Point of View in discourse on political protests.
Franziska Boll, Lena Hotze and Silva Ladewig. EUV Frankfurt (Oder). How discourse shapes gesture.
Alan Cienki and Joep Cornelissen. VU University Amsterdam. 'Meaning making' in cognitive linguistics and 'sensemaking' in organizational studies.

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Multimodal alignment is dynamic: evidence from cross recurrence methods

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Background

When engaged in face-to-face interaction, interlocutors copy each other's linguistic and non-linguistic behaviour (among many others: Bergmann & Kopp 2012, Brennan & Clark 1996, Chartrand & Bargh 1999, Giles et al. 1992, Pickering & Garrod 2006). To understand the underlying mechanisms of this phenomenon, this study zooms in on two related topics. First, we dig into the time-alignment of the copying behaviour. By adopting cross recurrence quantification analysis (CRQA, Coco & Dale 2014) we demonstrate not only the high frequency at which alignment occurs, but also *when* it occurs, relative to the timeline of the ongoing interaction. Second, by performing the same analysis on different multimodal channels (i.c. gaze, gesture and speech) we show the trade-off and interaction between those channels.

An increasing number of researchers uses CRQA as an analytical tool to study coordination in conversation (for an overview, see Fusaroli 2014). What is not yet addressed systematically in these studies is how persistent the recurrence of the behaviour under scrutiny is *across time*. Our study shows that the synchronisation of gaze, as well as of gesture and speech, is not at all persistent but highly dynamic. Alignment at each of these multimodal layers fluctuates throughout the conversation, indicating that speakers have very local reasons to align more (or less) during some parts of the interaction, compared to other parts. This dynamicity has in part been demonstrated by Louwerse et al. (2012), who found more alignment as speakers talked longer to each other for various multimodal behaviours. The present study adds a more fine-grained and differentiated view on the temporal dynamics, and provides evidence that the gradual increase of alignment observed by Louwerse et al. (2012) does not hold true for all of the multimodal layers under scrutiny.

That interlocutors in face-to-face conversation align at different linguistic and non-linguistic levels is beyond dispute. However, little is known about how alignment at one level affects alignment at another. Are dyads that align their speech all the time, also highly aligned gesturally? Or do we see high lexical alignment scores in parts of the interaction where there is a clear peak in gaze alignment? Our results are indicative of a near independence of the multimodal alignment we measure: the correlations between recurrence rates at the different multimodal levels are low. More specifically, and in line with previous research (see Oben & Brône 2014), the alignment of speech and gesture are totally unrelated, or in some dyads even inversely related.

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Communicative accommodation in the intercultural environment of German - Polish borderland

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Background

Intercultural environment of borderlands provides peculiar settings for interpersonal communication where interaction between nations and cultures is not limited to accidental encounters. It must function on various levels on a daily basis. The geographic proximity of the parties as well as their mutual relations, obligations and numerous interdependencies mean that they must maintain their contacts, overcoming conflicts and problems. This, in turn, requires mutual adjustments in their everyday communication (Giles & Smith 1979, Giles et al. 2010).

Słubice and Frankfurt/Oder form a pair of town organisms bound to each other by their geographic proximity but divided by the state border and, perhaps deeper, by language and cultural differences. In the Borderland project, we explore selected aspects of co-ordination in face-to-face communication between young inhabitants (students of high schools of Słubice and Frankfurt/Oder region) in Polish-Polish, Polish-German and German-German pairs. They take part in a pre-designed dialogue task that involves collaborative and competitive problem solving. We capture their behaviour using two camcorders and an independent two-channel audio recorder. In the collected material, we look for co-ordination (Pickering & Garrod 2004) between the pupils in the paralinguistic aspects of their communicative behaviour, specifically in gestures (e.g., Kopp & Bergmann 2013) and speech prosody (e.g., Vaughan 2011, Truong & Heylen 2012). We intend to use the existing and to design our own pitch and speech rate measures (e.g., Karpiński et al. 2014) as well as gesture similarity measures (e.g., Krishnan & Sarkar 2013) that would help to describe and model the phenomena under study.

We believe that what we observe reflects deeper mental phenomena that occur in the process of mental representation alignment. We assume that both top-down and bottom-up processes lead towards a certain optimum degree of alignment between representations and reference frames in the participants. These processes would be influenced and balanced by cultural and linguistic factors we intend to identify (Watson et al. 2004, Pickering & Garrod 2004).

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Patterns of multimodal meaning making in career „Clean Language" coaching sessions

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Background

The main aim of this research is to study how different ways of giving questions support development of metaphorical expressions in conversation. Metaphorical expressions are known to appear naturally in everyday discourse (Lakoff and Johnson 1980 or 1999; Cameron 2010; Steen 2010) and in multimodal ways: verbal or gestural (Mueller 2008; Chui 2011). In one of main cognitive linguistic theories – contemporary metaphor theory – they are treated as manifestations of fundamental conceptual associations between different conceptual domains (Lakoff 1993; Tay 2013). These conceptual associations are claimed to be shared between people and related to their culture and language, whereas some of them are claimed to be embodied and universal. Yet little is known about the way some metaphors become more personal, that is chosen by a particular person in order to understand their experience and structure their behavior.

Personal metaphors were collected for this study in specially designed conversations based on career coaching sessions. Professional coaches used „Clean Language" questions and mimicry techniques to elicit multimodal expressions of metaphors from coachee and support their development. „Clean Language" is an innovative method of questioning as it helps eliciting naturally occurring metaphors in order to provide in-depth understanding of a person's symbolic world (Tosey, Lawley, Messe 2014). The coach, while asking questions about career plans, repeats exact wording of the coachee (hence parrot-phrasing) and parallels their gestures. Thanks to these mimicry techniques, „Clean Language" questions are used to support coachee in developing metaphorical expressions from their concepts and feelings or attitudes.

Sessions were recorded with cameras and microphones. Selected sessions were transcribed and annotated by separate groups of trained raters. To identify multimodal metaphors and symbols Polish version of MIP was used for verbal metaphors and MIP-G (Cienki 2012) for gestural metaphor. Additionally, NEUROGES coding system was used to identify functions and types of hand movements (Lausberg 2013). NEUROGES coding system allows to distinguish between hand movements related to emotional processes or emphasis and those related to cognitive or conceptual processes. Next, a pattern analysis was conducted using THEME software (Magnusson 2000) to uncover patterns of multimodal meaning making. Such patterns are sequences of specific clean language question with coachee's words and gestures followed by coachee's answers including multimodal metaphors. Analyses of patterns of multimodal meaning making in career „Clean Language" coaching sessions shows how personal metaphors emerge and how unique they are for each coachee as individual.

Mimicry behaviour as a function of verbal and physiological markers. Reports from an interdisciplinary experimental study

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Subtle Messages of Campaign Commercials

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Background

Metaphors are a fundamental tool of political rhetoric. In election campaigns they are widely used to give voters a vivid and clear understanding of political messages (Charteris-Black 2006; Lakoff 2002). This paper addresses how multimodal metaphors and metonymies are used in campaign commercials in Germany and Poland. Political parties tend to use forms of figurative meaning for the purpose of making their own viewpoint skilfully plausible and to persuade the viewers of their respective points of view. Based on two case studies on campaign commercials this paper will explore how exactly metaphoric and metonymic meaning making plays out in this process. Specific attention twill be paid to the dynamic interplay of the different modalities, e.g., camera, sound, or montage.

Hitherto cognitive-linguistic (as well as film-theoretic) studies (e.g., Forceville 2008; Urios-Aparisi 2009; Fahlenbrach 2005) on audio-visual metaphor consistently draw on the widespread primacy of language. As a result, metaphors in audio-visual media are still conceived of as pre-existent meaningful word-image correspondences that a producer intentionally construed. From such a point of view, the viewer is reduced to a mere receiver of purposeful meaning. Moreover, the dynamicity of meaning making in multimodal discourse in general, and the media-specific dynamics of moving audio-visual images in particular are entirely disregarded. Therefore, the talk aims to focus on the process of meaning making and the viewer as an active part in it through the dynamics of feeling. A closer analytical look will reveal that metaphoric meaning emerges and unfolds in close interaction with metonymy and without any verbal expression that would have induced it. Through the interplay of audio-visual modalities both figurative forms of thinking are activated sensorily: as experiential scenarios that modulate the viewers' felt sensations (Johnson 2007). Thus, metaphoric and metonymic meaning emerges dynamically on the basis of feeling and without any verbal expression triggering it.

This perspective on audio-visual metaphors is the result of bringing together theoretical concepts of cognitive-linguistics and film-studies (Kappelhoff and Mueller 2011). It takes account of audio-visual metaphors' dynamics and media specificity and opens up interesting insights into questions of meaning making in multimodal forms of discourse and the role that feeling plays for thinking and understanding.

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Multimodal discourses of collective memory: Gesture

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Background

Language in the present study is viewed not as a product but as a process of talk in interaction (cf. Haviland 2000, Müller 2007, Beattie – Shovelton 2007). It is thus inherently multimodal, where meaning is constructed both at the verbal and the gestural levels. In cognitive linguistics analysis of language performance is often key for the investigation of conceptual structure, which consists, among others, of image schemas (Johnson 1987) and memetic schemas (Zlatev 2007). Cienki (2013) proposes that memetic schemas as less abstract can be more useful in analysing meaning making in gesture. The present paper aims at exploring this claim with an empirical observational study.

The data come from a large-scale project: "Collective Memory, collective identity and urban landsape. A case study of Poznan" funded by the Polish Research Fund (grant number: 2013/09/B/HS6/00374). One part of this research project consists in individual interviews with city elites (teachers, city administrators, priests) and focus group interviews with four generations of Posnanians, who talk about the existing and liquidated cemeteries as sites of (non)memory. The interviews are audio and video recorded. In the present study their verbal-gestural responses to two questions will be investigated. One concerning the construction works unearthing the remains from the liquidated but not fully disinterred cemetery, and another about the memory and commemoration of the Jewish and German communities, which contributed to the city growth in the 19th and early 20th century, but their numbers after the war have been negligible. It is expected that the first question would elicit more concrete vocabulary and iconic gestures, while the second question will elicit more abstract vocabulary and metaphorical gestures (cf. Cienki 2012 Lausberg 2013 on gesture types). These verbal-gestural units will be coded with respect to several variables: (1) **conceptual motivation**: memetic or image schematic (cf. Cienki 2013), (2) **language system** with two variants denoting the nature of the relation between speech and gesture: co-expressive or complementary; (3) **discourse** relating to the one of the two interview topics; (4) **social variables**: speaker's age and gender, (5) **gesture type**: either iconic or metaphorical, (6) **speech type**: either metaphorical or non-metaphorical (7) **gesture articulation**: low gesture space vs. high gesture space, eye gaze directed at the gesture vs lack of eye gaze, relaxed vs tense hand.
Multifactorial correspondence analysis (Glynn 2014) run on these data is expected to show if any of the coded factors systematically correlate with either memetic or image schematic motivation. The results of the study at the methodological level will answer the question whether correspondence analysis can be used in analysing multimodal discourses, while at the theoretical level it aims to show how conceptual motivation can affect the form and meaning of gestures.

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Trust dynamics in multimodal corporate discourse: the role of metaphor

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Background

This paper investigates how large multinational corporations use multimodal meaning-making resources to communicate a trustworthy corporate identity. It combines insights from Forceville's work on pictorial and multimodal metaphor (Forceville 1996, 2002; Forceville and Urios-Aparisi, 2009) and key features of Fuoli and Paradis' (2014) model of trust-repair discourse to examine the discursive dynamics of trust-building in a corpus of promotional corporate videos produced by some of the world's largest corporations. The analysis shows that multimodal metaphors are deployed as key persuasive devices to promote three fundamental attributes of the companies' trustworthiness, i.e. *ability*, *integrity* and *benevolence*.

This paper sheds some light on how trustworthiness is constructed through multimodal resources in corporate discourse and contributes to our understanding of the discursive dynamics of trust, which is still limited and fragmentary (Fuoli and Paradis, 2014; Linell and Keselman, 2011). But the study also carries implications for cognitive linguistic theory, in particular for conceptual metaphor theory. Three theoretical issues requiring further discussion are highlighted: (i) the distinction between conventional and novel metaphor and the question of 'deliberateness' (Steen, 2008), (ii) the usefulness of the notion of *metaphor scenario* (Musolff, 2006) as a descriptive tool in the realm of multimodal discourse, and (iii) the adequacy of Lakoff and Johnson's (1980) model versus Blending Theory (Fauconnier and Turner, 1996, 1998; Grady et al. 1999) for describing novel multimodal metaphors and accounting for the evaluative function they can perform in persuasive multimodal discourse.

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When embodied concepts are literally embodied. Multimodality and metaphor in abstract concept descriptions of blind children.

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Background

Embodied cognition is a framework for understanding thought in relation to the social and physical environment and the human perceptual-motor systems. By reframing cognition as a process that depends also on the interactions with the world, embodied cognition recast many of the central issues of the study of thought and language. One of the ways that cognition is seen as embodied is through the close relation of hand gestures with thinking and communication.

Research demonstrates that a vast majority of abstract concepts, both in language and gesture, is represented in concrete terms (e.g. Cienki and Müller 2008) and many abstract subjects are commonly described as sensorimotor experiences (Lakoff and Johnson 2003; Szwedek 2002). Just as they use metaphors in language to describe a variety of abstract concepts, people use physical space to represent ideas that have no physical instantiation in the world. However, a significant amount of information about space is acquired visually. When learning abstract concepts, blind and severely visually impaired children have to make up for the scarcity of available visual information. Research shows that imagery, motion, and introspection play a crucial role in the shaping of concepts in congenitally blind children (Sánchez et al. 2011). For blind children, much of concept learning occurs through the body. Are these learning strategies impacting the way that these concepts are used?

The presented study looks into the ways that early and congenitally blind and severely visually impaired children make use of perceptual cues from multimodal sensory input regarding abstract concepts. We asked a group of 12 children and young adults with sight impairments to explain 21 concepts in language and gesture, and recorded their replies. These were analysed in terms of language and co-speech gesture. It is known that the gestures of blind children and adults are comparable to that of their sighted peers in terms of frequency and type (Iverson and Goldin-Meadow 1997, 2001; Iverson 1998). There are, however, certain differences in the areas of experience to which these gestures refer (Jelec 2014). The results of the presented experiment indicate that blind persons‘ abstract mental representations are heavily embodied, in that the descriptions rely on sensory experiences with objects but also appear to be influenced by the social and physical environment associated with the acquisition of a given concept. Imagery, motion, and introspection were all visible influences on the performed gestures. The participants used a number of strategies for explaining the concepts in speech and gesture, including exemplification, metaphor and simulation. In a way, for the blind participants explaining abstract concepts seemed to depend on the use of the body as an articulator.

This paper will focus on presenting different ways in which abstract concepts can be represented in speech and gesture, demonstrating how multimodality of input appears to be a factor alleviating the lack of visual information in cases of early and congenital blindness.

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Feeling for speaking and the dynamics of multimodal discourse

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Background

The title of this talk alludes to Dan Slobin's famous dynamic reformulation of the so called *linguistic relativity hypothesis*. Slobin criticizes von Humboldt and Whorf for their static understanding of the relationship between "thought and language". Instead he puts forward the idea of "thinking for speaking", because he looks at language in use. Speaking is a process in which: "the expression of experience in linguistic terms constitutes thinking for speaking – a special form of thought that is mobilized for communication." (Slobin 1996: 76) In our talk we would like to draw the attention not to thought, but to the actual experiences that are mobilized, when people talk about their emotions and we will argue that very often, speakers not simply express conceptual content, instead they use a bodily movement, an embodied experience before they actually verbalize a description of an emotion.

The data was collected in the context of an interdisciplinary research project "Language and Gesture of Alexithymia", associated with the Languages of Emotion Cluster at the Free University Berlin. Alexithymic people are diagnosed as having difficulties verbalizing emotions. The present article is based on a data subset of this project: 62 videotaped interviews in which we elicited identification, conceptualization and contextualization of six basic emotions in control subjects: pride, surprise, fear, happiness, anger, jealousy.

The multimodal analysis revealed that bodily enactments of the emotions recurrently precede semantically conjunct verbalizations of emotion concepts. Thus somebody being asked to describe his or her concept of surprise, answers with an elaborate bodily enactment of surprise: raised arms, shoulders, chest, head and eyebrows, which after holding it for a moment she describes verbally: "Well such a (...) deep breath, such a straightening of oneself, I don't know, like what I just did". She thus first feels the "deep breath" and the "straightening up" before verbalizing it. This is what we term *feeling for speaking*: the bodily experience that grounds talking about emotions in situ, irrespectively of whether the emotion concept was metaphoric, metonymic or a non-figurative description of body movements. Some of the 'literal' emotion descriptions may in other contexts well be used metaphorically. We believe that, the phenomenon of *feeling for speaking* throws new light on an embodied understanding of emotion concepts and opens up new lines of reflection upon the relation between embodiment and figurative language in general (Gibbs 2005; Kövecses 2002, 2008; Niedenthal et al 2009).

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Toward a cross-modal semantic annotation framework: POINT OF VIEW in discourse on political protests

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Background

This paper continues a program of research in Critical Discourse Analysis investigating connections between meaning in linguistic and visual modes of communication and the ideological potential that such meanings carry (e.g. AUTHOR 2014, in press). In Multimodal Discourse Analysis (e.g. Kress and van Leeuwen 2006; Lim 2004; O'Halloran 2008) a number of functional systems for visual semiotics are proposed, including DEEP SPACE, POINT OF VIEW and FICTIVE MOTION. Based on the view of language in Cognitive Grammar, according to which linguistic meaning involves visuo-spatial properties (Langacker 2008), I argue that such systems may similarly function in verbal semiotics realised in the conceptual representations associated with different language usages. The paper therefore proposes a cross-modal *semantic annotation framework* for analysing meaning in both language and image, focussing on POINT OF VIEW in particular. A grammar of POINT OF VIEW is presented, discerned from news photographs of political protests. This grammar shows options in ANCHOR (*panning*), ANGLE (*tilt*) and DISTANCE (*zoom*) with different values in these parameters suggesting alternate, context-specific, ideological evaluations (Kress and van Leeuwen 2006). This grammar is then shown to function in language as competing grammatical constructions invoke a construal of the scene described from contrasting points of view. For example, regular transactive versus reciprocal constructions as in (1) compared to (2) can be characterised in terms of a point of view shift in ANCHOR. In (1), the viewer is 'situated' behind the patient, downstream in the energy flow as in Figure 1a. In (2), by contrast, the viewer is situated between both agentive participants as in Figure 1b. (1) compared to (2) can thus be analysed as invoking an 'involved' versus an 'observer' perspective respectively. Ideologically, (1) construes the scene from the perspective of the patient as the victim of violence whilst (2) construes it more neutrally from the perspective of a 'witness' to the event.

(1) A number of police officers were injured after [[they $_{\text{patient}}$] [came under attack from $_{\text{action}}$] [youths $_{\text{agent}}$] $_{\text{pv}}$]. (*Express*, 10th November)

(2) [Police wielding batons $_{\text{agent}}$] clashed with [a crowd hurling placard sticks, eggs and bottles $_{\text{agent}}$] (*Guardian*, 10th November)

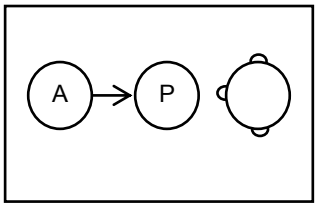

Figure 1a.

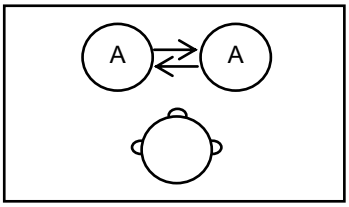

Figure 1b.

Whilst (1) and (2) both invoke a view from 'on the ground', event for participant metonymies as in (4) compared to (3) can be analysed as encoding an aerial point of view (high ANGLE plus long DISTANCE) in which individual participants and interactions between them are no longer discernible but rather actors are collected, seen as a single autonomous unit which itself can be attributed properties like agency (see also Talmy 2000). Other contrasting constructions, including causatives, can be characterised in a similar way as shifts in DISTNANCE on the horizontal plane.

(3) Tuition fee protests: eight injured, five arrested as [students $_{\text{agent}}$] turn violent (*Telegraph*, 24th November)

(4) [Student protest over fees $_{\text{ep mtnmy}}$] turns violent (*Guardian*, 10th November)

This kind of analysis suggests a fruitful conversation between cognitive linguistic and multimodal critical discourse studies in which, since language is found to rely on the same cognitive systems and conceptual processes as visual communication, the latter can contribute to our understanding of meaning in language. It further suggests the possibility of a semantic annotation framework which can be used to code meaningful elements common to both linguistic and visual texts.

How discourse shapes the understanding of gesture

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Background

So far, cognitive linguists who have studied the emergence of gestural meaning largely focused on the producer's side of multimodal utterances and applied phenomenological and descriptive approaches to the investigation of dynamic multimodal meaning (Müller, 2008). In this talk, we will present a slightly different take on the phenomenon of multimodal meaning creation by focusing on the recipient's side of multimodal utterances and by conducting comprehension experiments. In doing so, we approach the question of whether the dynamic flow of discourse really matters for the understanding of gestures.

The study to be presented, addresses gestures replacing spoken constituents of utterances in sentence final position (Ladewig 2014). These gestures were taken from a corpus of 20 hours of naturally occurring conversations and built the stimuli for three perception experiments. First, we investigated gestures without speech. Second, we examined gestures only in the context of the utterance, they complete and third, we studied gestures in their larger discourse contexts. In each condition, 66 video clips were shown to 15 people (8 female, 7 male). The subjects were asked to watch the video clips and write down a lexical choice they considered best suited for the gesture. Altogether, 2960 lexical choices were elicited which built the basis for the investigation of the comprehended gestural meaning. The extracted gestures as well as the lexical choices were investigated thoroughly with respect to the image schematic and motor patterns they exhibited (Cienki, 2005). The flow of discourse was reconstructed by applying the timeline annotation procedure for documenting the sequencing of metaphors across modalities, over time and speaker (Müller & Ladewig 2013).

We found that subjects were able to reconstruct gestural meaning in all three conditions. However, we could observe that the comprehended gestural meaning became increasingly specified the broader the discourse context became. Two different ways of specification could be identified, regarding different aspects of gestural meaning constitution:

1. The semantic information of gestures is foregrounded through the flow of discourse, making the gestural meaning more specific. This regards the *intensional meaning* of gestures.
2. The semantic space, the gesture occupies, is narrowed down and specified through the flow of discourse, giving rise to a different or a specified gestural reference object. This regards the *extensional meaning* of gestures.

Based on our observations, we argue that discourse affects the perception and the understanding of gestures. Gestures are capable of conveying meaning on their own but the way gestural meaning is "construed" (Langacker, 1991) highly depends on the flow of discourse a gesture is situated in.

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Motion, metaphor and gesture: A comparison between referential gestures referring to concrete and abstract motion

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Background

Some consensus has been reached in Cognitive Linguistics that much of our thought is grounded in physical actions and that meaning is in some ways embodied (Lakoff & Johnson, 1999; Barsalou, 2008). Some motor concepts have been argued to be image schematic in nature and to be fundamental embodied experiences which give rise to more abstract concepts (Johnson, 1987). Motion plays a key role in how we conceptualize events, whether they involve physical processes or abstract notions (see Johnson, 1993 on the Event Structure Metaphor). The starting point of the present research is to learn more about whether there are any similar kinds of motor imagery based upon which we conceptualize concrete and abstract (and thus metaphoric) motion. An investigation of gestures co-articulated with speech in natural discourse is at the center of this study, given what is known about how gesture represents mentally simulated action (Hostetter & Alibali, 2008). To what extent are the form and function of spontaneous referential gestures referring to concrete and abstract motion related or different?

This research investigates the conceptualization of motion represented in visible/gestural forms of expression using a corpus-based approach. The conceptualization of motion is understood here as a minimal analytic unit of thought, following the notion of the "growth point" (McNeill, 1992), which can be 'unpacked' in linguistic and gestural modalities in the process of speaking. The corpus used in this study is in American English, from the Red Hen video database (https://sites.google.com/site/distributedlittleredhen/home). The set of high frequency motion lexis to be analyzed was decided with the help of an automatic semantic annotation tool – Wmatrix (Rayson, 2008) and Wordnet – a widely used large lexical database of English (Miller, 1995). Some examples of the relevant lemmas include: *go, come, run, move, grasp,* etc. Utterances with these verbs will be chosen for the study if there are referential gestures co-articulated with the clauses in speech; the verbal motion expressions will be coded as concrete versus abstract (metaphoric) using a manual annotation tool: the MIPVU procedure (Steen et al., 2010).

The gesture coding involves the coding of form and function using the software ELAN. Forms will be coded in terms of gesture unit, gesture phase (preparation, stroke, retraction) (Kendon, 2004). The form features of each stroke will be coded in terms of hand shape, orientation, location in space and motion direction/ type/ manner (Bressem, 2014). The functions will be coded based on Müller (1998) and Streeck (2008; 2009), including the following methods of referring -- pointing, modeling, drawing, bounding or measuring, shaping, handling, and acting. The preliminary results show that gestures for the physical and the abstract are similar in several features of gestural forms. This suggests concrete and abstract motion might be motivated by similar motor imagery, which is important for further understanding of the relation between language and cognition.

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Producing Figurative Language: linguistic, cultural, philosophical, psychological and computational perspectives

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Background

This session aims to engage the Cognitive Linguistics as well as the broader Cognitive Science communities on the topic of the production of figurative language. “Figurative” here is intended to include metaphorical, metonymic, ironic, hyperbolic and other modes of figuration. The Theme Session is primarily interested in figuration in language, but also in any other medium involving figurative expression, including gesture, pictures, diagrams, music, dance, or whatever. The papers in this session engage with new thinking about the production of figurative expressions, rather than their understanding only, this latter having been relatively over-developed compared to production. There is a growing body of work on the production of figurative language, which has been carried out in areas as diverse as developmental studies (Winner 1997), psycholinguistics (Chiappe & Kennedy 2001), language learning (Littlemore et al. 2011), neurolinguistics (Benedek et al. 2014), communication and performance studies (Gibbs & Cameron 2008) and natural language generation (e.g. Martin 1988, Huang & Zhou 2005, Veale & Hao 2007, Gargett & Barnden 2015).

As the above list suggests fertile ground has recently been planted that could be further developed. Accordingly the theme session aims at making progress on accounts of the production of figurative language, from linguistic, cultural, psychological, philosophical and computational perspectives.

In line with the overall conference theme, the papers in this session bridge theory and method. The Workshop is interdisciplinary in a fairly novel way, and the papers that have been accepted for presentation will cover a wide variety of topics.

Contributors

Herbert L. Colston and Eleanor Kinney. University of Alberta, Canada. “Producing Figurative Pragmatic Effects: Endings Justifying Meanings.”

Cristiano Broccias. Università di Genova, Italy. “Simultaneous motion in multiple dimensions: Why metonymy isn’t enough.”

Anna Piata. University of Athens, Greece. “On the production of figurative language: Toward a genrebased account of deliberate metaphor.”

Margarida Basilio. Pontifical Catholic University of Rio de Janeiro, Brazil. “Different motivations for metaphor and metonymy in Portuguese word-formation.”

Diane Ponterotto. University of Rome, "Tor Vergata", Rome, Italy. “The role of figurativeness in emotional communication: an experimental study.”

Jeannette Littlemore, David Houghton, Paula Pérez Sobrino, and Shi Jinfang. University of Birmingham, UK. “The reception of computer-generated metaphors by international audiences.”

Loes Koring. Department of Cognitive Science, Macquarie University, Australia. “Definiteness as a trigger of idiomaticity .”

Stephen McGregor, Matthew Purver, Geraint Wiggins. Queen Mary University London, UK. “An Emergent Model of Metaphors as Transformations of Vector Spaces.”

Tony Veale. School of Computer Science and Informatics, UCD, Dublin, Ireland. “Can a Machine Exhibit a Sense Of Irony? Human Evaluation of Machine-Generated Figurative Statements.”

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Producing Figurative Pragmatic Effects: Endings Justifying Meanings

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Background

Of the two arguably most-often-asked questions about figurative language—how is it comprehended and why is it used, the latter has particular import for issues concerning figurative production. Put most simply, people produce figurative language, in part at least, because it accomplishes collages of meaning in the minds of interlocutors, referred to as ***pragmatic effects*** (Colston, forthcoming). These pragmatic effects typically reside in the comprehender(s), but can also arise in the speaker, and are intended much of the time but can indeed *emerge* from figurative (and non-figurative) language usage in interlocutors without explicit preceding intention. Pragmatic effects, in whoever and however they occur, thus provide one of the primary motivators for the presence of diverse forms of figurative language, and their usage in everyday conversational interactions and writings, as well as in gestures, multimodal interactions, images and other cultural artifacts.

A speaker producing verbal irony for instance, might express negative emotion about, or instill a negative perception of, some referent topic, person or event (e.g., saying, *"Superb little performance there"*, to scold a person for revealing a friend's cherished secret). Another person might produce a metaphor to enhance resultant meaning in a comprehender, also concerning a target issue (e.g., remarking perhaps about the regularity of such information slips in a speaker, or the capacity for correction with, *"You need to get new washers for that faucet"*). Idioms might offload some of the implied criticism in the information-slip story by allowing an expression's fixedness to carry some of the scold (e.g., *"You spilled the beans on that one"*). Speakers could also convey their feeling that the speaker's error was much worse than expected via hyperbole (e.g., *"That was the worst blunder ever"*).

The range, variety and underlying mechanisms of such pragmatic effects, as well as the inherent social underpinnings of their performance, will be discussed. Among these include the operation of ***cognitive side effects***, or fast, partially automatic, low-level perceptual and cognitive processes that can *leak into* language processing and interact with comprehension products, and ***social belonging and hierarchical motivations*** that drive cognitive processes of language comprehension.

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Simultaneous motion in multiple dimensions: Why metonymy isn't enough

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A recent controversy in the journal *Language Sciences* (Broccias 2013, 2014 vs. Iwata 2014a, 2014b) involves the analysis of examples such as (1), which may be regarded as a possible counterexample to Goldberg's (1995) *Unique Path Constraint* (UPC).

(1) He fell to his death.

The UPC bans simultaneous motion in multiple dimensions but, in (1), physical downward motion seems to take place at the same time as metaphorical translational motion towards one's death. Iwata, following Goldberg (1991), claims that (*to*) *his death* is metonymic for "(to) the place of his death". Instead, Broccias rejects this analysis as, among other things, (2), from Matsumoto (2013), is infelicitous.

(2) *He threw himself from the balcony to his death, the place later visited by many of his followers.

At first glance, the controversy may appear to be terminological, depending on whether metonymy involves referential substitution as a necessary feature. In this talk, I will argue that this is not the whole issue. By invoking metonymy, Iwata and Goldberg neglect the conceptual complexity involved in the production of examples such as (1), which I will claim demands an analysis in terms of conceptual blending (Fauconnier and Turner 2002) and makes a reassessment of the notion of metonymy in Cognitive Linguistics a priority (see also Brdar and Brdar-Szabó 2014, Benczes *et al.* 2011).

In more detail, I will first point out that a metonymic analysis of (1) rests on so broad a definition of metonymy that its wide coverage obliterates its epistemological usefulness. Secondly, explaining (1) away in metonymic terms obfuscates its nature as a language-specific construction. If metonymy (only) were involved, we would still have to tackle the issue of why (1) is specific to English: I will speculate that (1) may be related to the satellite-framed nature of English (Talmy 2000). Thirdly, I will argue that producing (1) involves blending two types of motion, a physical one and a metaphorical one, by virtue of both being manifestations of a generic "change" space. This, of course, has consequences for the nature of the UPC, which is violable if multiple dimensions are evoked that are simultaneous manifestations of the same event.

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"On the production of figurative language: Toward a genre-based account of metaphor"

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Background

Although a robust body of research in cognitive linguistics has been concerned with metaphor understanding, significantly less has been said about the production of metaphor in particular speech events. The present study aims to shed some light on the production of figurative language by looking at the emergence of metaphor in poetic discourse with the aim to highlight the role of genre in motivating the production of metaphor. To enable such an endeavour, the present study builds on so-called "schema poetics" (Stockwell 2006), that is, the idea that our mental representation of poetry (like all other genres) involves schematized knowledge that is shared among language users. Part of such schematized knowledge, I argue, is the use of metaphor that is deliberate on the part of the producer/ author. According to Steen (2013: 183), deliberate metaphor "involves people using metaphor *as* metaphor: it makes intentional use of something to think about something else". Deliberate metaphor is thus opposed to non-deliberate metaphor, such as using spatial prepositions to talk about time (e.g., "in 2014") where the cross-domain mapping is not deliberately used by the speaker and therefore is rather unlikely to be recognized as metaphorical by the language user (whether speaker or hearer). Deliberate metaphors are based in on-line comparison across conceptual domains while they can serve different communicative functions depending on the text type, the register, the topic, the goal, etc. Novel metaphor of the kind found abundantly in poetic discourse is considered deliberate metaphor *par excellence*; it involves observable, on-line, cross-domain mappings, even if the linguistic forms or the conceptual elements contained therein are not novel. Using data from a small, specialized corpus of Modern Greek poetry, the present study approaches novel metaphor as such an instance of deliberate metaphor and suggests that deliberateness forms part of the production of metaphor in poetic discourse. Specifically, deliberateness in the case of poetic metaphor relates to an intentional use of so-called "schema disruption" (Stockwell 2002); when used in cross-domain mappings, the use of world schemas and formal schemas (either textual or language schemas) can often be incongruent with prior schematic knowledge, thus challenging the reader to enrich or revisit their existing schemas. In empirical grounds, it will be argued that the production of poetic metaphor should be better understood in terms of the genre context in which it occurs. Such an account suggests that producing metaphor is a semiotic phenomenon that is situated in the particular discursive context in which it occurs, viewed as genre. Therefore, notwithstanding experiential and cultural motivations at work, the proposed analysis suggests that discursive, genre-based motivations are also involved in the production of metaphor in discourse. Finally, such an account raises implications for deliberate metaphor in general.

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Different motivations for metaphor and metonymy in Portuguese word-formation

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Background

In this paper we argue that metonymy and metaphor have a distinct functional role in Portuguese word-formation: metonymy is fundamental in derivation, conversion and some types of compounds, whereas the main locus for metaphor is semantically exocentric compounding.

We understand metonymy to be a cognitive process in which a conceptual entity, the source, provides mental access to the target entity within the same cognitive domain (icm). We also take into account Langacker's (2000) comments on the metonymy/reference point connection. Metonymy has already been shown to have an important role in derivation and conversion (Panther &Thornburg 2009, Janda 2011, etc.). Suffixal derivation and conversion are indeed frequently based on metonymy to (re) produce words which conceptualize something in terms of a reference point. For instance, adjectives can be a source for noun production, case in which the noun denotes someone for having the property evoked by the adjective, such as in ptg. *cego* 'blind, blind man'; denominal verbs are produced to denote an event evoked by the original noun, as in ptg. *patinar* 'to skate' from *patins* 'skate'; etc.. Metonymy also plays a crucial role in bahuvrihi compounds and V+S exocentric compounds (Barcelona, 2011). The amount of lexical innovation involving metonymy is not surprising, since metonymic patterns connect to morphological patterns, thereby providing an easy way for denotation from different reference points.

As for metaphor, our focus is the cognitive mechanism by means of which a salient part of a conceptual entity is projected onto a target entity pertaining to another cognitive domain, so that the target entity is understood in a way that incorporates meaning from the source entity in a relevant manner. This vision of metaphor converges with Steen's (2008) notion of deliberate metaphor when he says that "Deliberate metaphor truly is a means of understanding one thing in terms of something else".

Metaphor is relevant in semantically exocentric compounds in Portuguese in which the modifier of the first element causes its re-semantization, thus projecting the whole compound onto a different cognitive domain. For instance, in *secretária-eletrônica* 'answering machine', *secretária* 'secretary' is projected from the domain of human agents (or, more specifically, office clerks) to the domain of electronic instruments, an effect of the added adjective *eletrônica* 'electronic'. A more radical example of this mechanism is the compound *empresa-fantasma* 'fictitious corporation', from *empresa* 'corporation' and *fantasma* 'ghost', in which the dubious nature evoked by *fantasma* metaphorically projects *empresa* from the business domain to a criminal domain. In both cases, there is an expressive pragmatic function, an attempt to subvert meanings, as it were. Metaphorical constructions of this type should not be frequent in on-line situations, as they are compounds in which, in spite of the high level of analyzability, the relation between the general meaning and the meaning of the components is perceived only a posteriori, when one knows the specific reference. Yet their occurrence is sensitive to the interaction between the semantic/encyclopedic situation of both noun and adjective and contextual factors, case in which they can turn out to be productive. In fact, *N-eletrônico/a* and *N-fantasma* are productive compound schemas in Portuguese.

In the presentation, we show other examples and discuss some issues involved in our claims.

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The reception of computer-generated metaphors by international audiences

Jeannette Littlemore, David Houghton, Paula Pérez Sobrino, and Shi Jinfang

Background

Recent work in Natural Language Processing has focused on the automatic generation of metaphor in the form of tweets. The aim of this study was to investigate how those metaphors are evaluated by individuals with different linguistic backgrounds. Participants were shown a series of metaphoric tweets taken from the twitter account #MetaphorMagnet, which is described as an 'insightful, fully-automated creative metaphor generator' (http://afflatus.ucd.ie/article.do?action=view&articleId=39).

The study focused on the extent to which the participants thought that the content of the metaphors was a true reflection of human behaviour, the amount of time it took them to reach this decision, and the emotional responses provoked by the metaphoric tweets. These variables were related to the formal and semantic features of the metaphors and to the linguistic backgrounds of the participants. In terms of formal and semantic features, we focused on alliteration, assonance and the distance between the source and target domains. The linguistic backgrounds were English, Spanish and Chinese. The hypotheses were that tweets containing a high degree of alliteration and assonance and where the source and target domains were far apart would be deemed to be 'truer of human behaviour', provoke stronger emotional responses, and elicit faster response times.

The participants were presented with a series of tweets on computer and be asked to indicate by indicating on a scale from 1 to 5 how true they were of human behaviour. Their reaction times were measured during the test. During the study, we measured their emotional responses to the tweets via an electrodermal activity meter. The results of the study will be reported in the presentation.

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Definiteness as a trigger of idiomaticity

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Background

Figurative language is a prominent part of our daily lives. But how do we actually build idiomatic expressions? What properties make for a good idiom? This paper explores which linguistic tools trigger idiomaticity and identifies definiteness as one such trigger. That is, the use of a definite determiner when no uniquely identifiable referent is present triggers a more abstract, figurative meaning. If we look at idioms, an important observation is that definite determiners occur frequently in them (Fellbaum 1993, Grégoire 2009). In addition, idioms with a fixed definite determiner have less morpho-syntactic flexibility than idioms with an indefinite one, as they are for instance less easily passivizable (Fellbaum 1993). This suggests that a definite determiner creates a more frozen, idiomatic representation (Fellbaum 1993). This hypothesis was tested by teaching participants new idioms that differed in definiteness of the direct object.

In the experiment, participants were asked to provide a meaning for newly constructed (non-existing) idioms. Forty native adult speakers of Dutch read 20 stories in which 'new idioms', phrases as in (1), were embedded. After reading the story with the idiom, the participant was asked what the idiom means and they were free to type in an answer of any length. Half of the participants received the new idiom with a definite determiner, whereas the other half received the same idiom with an indefinite determiner (while context was kept the same). Presentation of the idioms was counterbalanced.

(1) een/de aarbei aanbieden
'offer a/the strawberry'

The answers of the participants were coded as literal vs. idiomatic depending on how close the answer was to the literal meaning and structure of the constructed idiom. As an example, for the idiom in (1), the answer 'offer a gift' would be coded as literal whereas 'get married' would be coded as idiomatic. The prediction is that participants will provide more idiomatic meanings for the phrases with a definite determiner and more literal meanings for the same phrase in the same context with an indefinite determiner.

A multi-level analysis with MEANING (categorical) as the dependent variable and DEFINITENESS as predictor showed that there was a significant effect of definiteness on idiomaticity with indefinite idioms resulting in more literal answers than definite ones ($F=9.493$, $p<.005$). Definite DPs created less concrete, more idiomatic meanings.

This paper hypothesized that definite DPs in idiomatic phrases create more idiomatic idioms than indefinite DPs. The results showed that, indeed, definite objects in new idioms create less literal/more idiomatic meanings. Why would this be the case? The hypothesis is that a definite determiner in idioms when no familiar/unique object is present creates a kind-referring DP in our minds. That is, the DP does not pick out a particular individual, but refers to a kind of which the individuals share certain similarities (Carlson 1977). As such, idiomatic definites share many properties with weak definites that have also been argued to be kind-referring (cf. Aguilar-Guevara & Zwarts 2014). An indefinite determiner, on the other hand, requires the listener to introduce a new discourse referent to the discourse (e.g. Heim 1982). As such, a referential object for the NP in discourse will be created, resulting in a more decomposable idiom (Fellbaum 1993).

This paper showed that definiteness is one way to trigger idiomaticity. This is a clearly identifiable property and provides a principled way to identify more and less decomposable idiomatic phrases (cf. Nunberg at al. 1994). These results suggest that producing figurative language is producing marked linguistic structures. By producing a marked structure (for instance by violating the uniqueness requirement for definite DPs), an extra, idiomatic meaning is triggered.

An Emergent Model of Metaphors as Transformations of Vector Spaces

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Background

This paper will seek to investigate the computational generation of metaphor based on transformations of high dimensional conceptual spaces. In the mathematical logic of vector space models, semantics are described in terms of the geometric relationships between points, and these points, taking words as their indices, are defined through an analysis of the distribution of words in a linguistic corpus. Figurative language implies transformations of these spaces: through metaphoric action, a new geometry arises characterised by a congruence between the spatial situation of source and target.

Vector space models lend themselves naturally to compositionality due to the mathematically interactive characteristics of their constituents (Mitchell and Lapata 2010). Generally, this compositionality is practically achieved by treating predicates as matrices that facilitate the transformation of concept vectors into new compound vectors (Grefenstette et al. 2013). A primary motivation of this approach is the computational tractability of its operations—by the same token, however, there has been a focus amongst computational linguistics on the productivity of such systems rather than on the theory that explains their procedures.

This paper will reassess vector space approaches to lexical semantics in terms of the theory of conceptual spaces (Gärdenfors 2000), treating metaphor as a mapping between dynamically generated subspaces. Along with a continuously unfolding statistical analysis of the underlying corpus, the model proposed here considers the set of potential transformations between vector spaces through higher-order matrices as one of the constraints that defines any emergent conceptual space. As these transformations manifest themselves pragmatically as figurative language, the system is, in effect, perpetually generating metaphor in the course of the ongoing emergence of semantic structures. Metaphor production is therefore recast as one of the fundamental operations in a linguistic model, the stuff that facilitates syntagmatic connectivity and the emergence of syntax through functional composition.

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Can a Machine Exhibit a Sense Of Irony?
Human Evaluation of Machine-Generated Figurative Statements

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Background

Language affords a great many opportunities for the intelligent reuse of linguistic content. Rather than always putting our own thoughts into our own words, we often convey feelings through the words of others, by citing, quoting, mimicking, borrowing, varying or ironically echoing what others have already said. Social networking platforms such as Twitter elevate linguistic reuse into an integral norm of digital interaction. On such platforms, who you follow and what you re-tweet can say as much about you as the clothes you wear or the art you hang on your walls. But not everyone that is worth following is human, and not everything that is worth re-tweeting was first coined by a real person. In a fascinating development that extends the aleatoric methods of the surrealists and beat poets into the digital realm, more and more of the witty and thought-provoking content on Twitter is generated by *bots*, artificial systems that write their own material and vie for our attention just as humans do.

Irony and sarcasm are much-studied phenomena in social networks. Here we consider the *generative* aspects of irony and sarcasm, in the context of an autonomous computational agent – a *Twitterbot* – that crafts its own ironic and metaphoric tweets from its own knowledge-base of common-sense facts and beliefs. How might such a system exhibit a sense of irony that human users will find worthy of attention, and how might this system craft interesting metaphoric insights from a knowledge-base of everyday facts that are as banal as they are uncontentious? We shall explore the variety of linguistic containers at the disposal of this agent – a real working system called @*MetaphorMagnet* – to better understand how linguistic containers can be playfully abused to generate ironic, witty or thought-provoking views on the world. With @*MetaphorMagnet* we demonstrate that interesting messages are not necessarily crafted from interesting contents. Rather, effective tweets emerge from an apt if non-obvious combination of familiar linguistic containers with unsurprising factual fillers. In support of this view, we present an empirical analysis of the assessment of @*MetaphorMagnet*'s uncurated outputs by human judges on the Crowd-sourcing platform *CrowdFlower*.

The cognitive commitment 25 years on: are linguistic categories cognitively real(istic) (and do they need to be)?

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Background
Cognitive linguists endeavour to provide an account of language data that is consistent with what is generally known about human cognition, an aim often referred to as the "cognitive commitment" (Lakoff 1990: 40). Work in the CL tradition likes to stress that the analyses proposed are "in line with what is known about the mind" and abounds with claims that the proposed analysis would be cognitively realistic, if not cognitively real. But is this really so? And how much of our toolbox needs to be cognitively real for us to be cognitive linguists?

Our theme session combines theoretical contributions and empirical studies that critically (re-)examine the cognitive commitment and address this issue with respect to theoretical organization and quantitative methodology.

Linguistic categories such as phonemes, morphemes, parts of speech, modality, agentivity, tense, aspect, etc. are well established in descriptive and theoretical linguistics, even though their status as universal categories has been questioned (e.g. Evans & Levinson 2009). Moreover, Cognitive Linguistics has created or reinvented its own categories, such as image schemas, trajectors, landmarks, conceptual metaphors, constructions and frames, but, with few exceptions like Gibbs & Collston (1995), the problem of cognitive reality of these and other categories has not been addressed systematically. Some of the questions that are considered in the proposed theme session are the following:

- How should we define 'cognitive reality'? Should we try to detect linguistic (form- and meaning-related) categories in the brain (cf. Allen et al 2012) and what do we expect to find?
- Is the cognitive reality of a linguistic category necessary for it to be useful to cognitive linguists? How do we relate to categories that are unlikely to have cognitive relevance?
- Do we really need the traditional linguistic categories? Or should we instead consider models that do away with these distinctions?

As a matter of fact, over the past two decades, Cognitive Linguistics has taken a quantitative turn (Janda 2013). The number of publications that rely on empirical data collections and statistical data modelling has increased spectacularly. Reliance on data and statistics gives us more confidence in our conclusions, but does it guarantee that our models are any cognitively more real(istic) than they were before? Questions that will be addressed under this heading are:

- Are our statistics fit for purpose? Should we move to modeling techniques that are directly based on principles of human learning, such as Naive Discriminative Learning (Baayen 2010)?
- Do we reflect sufficiently on our methodology? Categories are cognitively more or less realistic depending on the way in which we deduct and measure them, or may be side-effects of our methods altogether.
- Which is more important to us in a model, parsimony or cognitive plausibility? Is a corpus-based model with high predictive power satisfactory even if the model's performance is not tested against speakers' performance (cf. Bresnan 2007; Bresnan & Ford 2010)?
- Are our publication practices ideal? Should we continue to pursue converging evidence (cf. Divjak & Gries 2012; Gries & Divjak 2012) or start looking at corpus and experimental data as different views on the cognitive processes behind language use?

Contributors
The contributions to our theme session address these and other pertinent questions regarding aspects of the cognitive commitment cherished within Cognitive Linguistics. Our theme session will consists of an introductory talk, 11 research presentations and a discussion session.

Divjak, D. & N. Levshina & J. Klavan. The cognitive commitment 25 years on. Introduction.
Baayen, H. Universität Tübingen (Germany). Cognitive grammar and discriminative learning.
Bermel, N. University of Sheffield (UK). If case functions are real, must cases and paradigms also be real?

Blumenthal, A. Albert-Ludwigs-Universität Freiburg (Germany). Is the morpheme category cognitively realistic?
Eckhoff, H. M., L. A. Janda & T. Nesset. Universitetet i Tromsø (Norway). The Radial Category as an Emergent Structure
Nesset, T. Universitetet i Tromsø (Norway). Do Historical Linguists Need the Cognitive Commitment? Prosodic Change in East Slavic.
Newman J. & T. Sorenson Duncan. University of Alberta (Canada). Convergence and divergence in Cognitive Linguistics: Facing up to different language realities
Nomikou, I., K. Rohlfing & J. Mandler. Bielefeld University, CITEC. Early action words: Evidence for linguistic categories in preverbal infants.
Paradis, C. & D. Tesfaye. Lunds Universitet (Sweden). On linguistic categories as categories: antonyms, synonyms, and nononyms.
Sanders, T. & W. Spooren. Utrecht University & Radboud University (The Netherlands). A plea for converging evidence: the case of causal categories in discourse.
Vihman, M. University of York (UK). Templates in child and adult phonology.
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Cognitive Grammar and Implicit Grammar

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Background

The idea that the core of language is a formal calculus, with an alphabet of basic symbols and rules combining symbols into well-formed formulas, has dominated modern linguistics. The influence of formal logic, in the tradition of Russell and the early Wittgenstein, is clearly visible in formal theories of grammar, where issues such as logical form, scope, coreference, and truth conditions have been core topics.

Compared to Generative Grammar, Cognitive Grammar has had a much richer array of phenomena on its research agenda, ranging from spatial categories to metaphors, and from force dynamics to fluid construction grammar. Although cognitive grammar rejected binary branching tree graphs as the key to understanding language, it did not question the necessity of positing basic symbols and abstract rules operating on these representations. However, by embracing the idea of redundancy, and hypothesizing that schemata are immanent in exemplars, cognitive grammar sought to break away from a rigid distinction between symbols (exemplar representations) and rules (schemata).

Implicit grammar is a computational theory, under intense development at the Quantitative Linguistics Research Unit at the University of Tübingen, that explicitly rejects the hypothesis of language as a formal calculus with representational primitives and combinatorial rules operating on these primitives (Baayen and Ramscar, 2015). Instead, Implicit Grammar views the language signal (spoken/written/signed words) as a signal which has the function to discriminate between experiences of the world (Ramscar et al., 2010). Crucially, the features in the signal jointly carry the discriminatory burden, with all features providing evidence for or against a given experience, to an extent determined by the foundational equations of discriminative learning developed by Rescorla and Wagner (1972). Current results (see, e.g., Baayen et al., 2011, for morphological effects in reading) indicate that models without decomposition and without compositional production are computationally feasible with competitive performance. In this approach, the grammar is implicit in the distribution of language signals, and is constrained by the principles of discrimination learning.

It is hoped that Implicit Grammar will provide a cognitively more principled way of accounting for the wide range of interesting phenomena topicalized by Cognitive Grammar than is possible with the rules+representations approach that Cognitive Grammar inherited from its generative and structuralist predecessors.

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If case functions are real, must cases and paradigms also be real?

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Background

A widely held tenet among cognitive linguists is that structure and categories emerge in the individual through accumulation of examples, and that the frequency with which we encounter items will affect those structures. This could be said to be a 'convergent' idea across the field. Perhaps less well investigated is the possibility that our explanations of these examples are frequently mediated by reference to traditional grammatical categories (see, inter alia, Goldberg 2009:104, Bybee 2006: 716).

Early cognitively-oriented investigations into case in languages with pervasive, well-elaborated systems (e.g. Janda 1993) suggested that 'cases' were cognitively plausible entities. However, in all these studies the formal membership of individual manifestations of 'case' is taken as a given, based on the appearance of convergent sets of morphological forms and syntactic agreement. Unpredictable variation within the system or overabundance (Thornton 2012) is seen as an orthogonal issue taken care of by other cognitive processes during early acquisition or later (see Dąbrowska 2005, 2008).

As part of this line of enquiry, we have collected examples of case form frequency in corpora to see to what extent they contribute to forced choices and evaluations of forms made by language users. Interestingly, the proportional frequency of forms in a corpus of standard written Czech (i.e. the percentage of times that locative *na ledě* 'on the ice' is found in comparison to loc. *na ledu*, with identical denotation) contributes far more towards the explanation of variation in these forms than does the absolute frequency of either form. This is true whether the absolute frequency is simply binned as 'high' and 'low', or whether it is treated as an interval variable. These results either confirm something significant about the 'reality' of grammatical categories for speakers, or simply reinforce existing beliefs about these categories due to their tagging and coding in corpora and the experimental structure.

The implication of our findings would seem to be that case forms and paradigm forms are more meaningful to users when compared to each other. In other words, we get more accurate predictions of usage and more of the unknown variance in people's judgments is explained when we start from the position that users group these forms in competition with each other and not with other forms elsewhere in the language – thus presupposing in our instance the existence of at least two 'grammatical' categories or structures (a case, a paradigm) employed by users. In such an account, higher-level entities like 'cases' and 'paradigms' abstracted over the data are 'real' for users. These categories are congruent with those traditionally found in non-usage-based descriptions of our grammars and suggest that new 'mixed' exemplar models allowing for varying levels of generalization may have the edge over models that do not make use of generalizations (see e.g. Albright 2009; Eddington 2009).

As a follow-up, we ran a study to check whether users could be influenced to change their ratings or choices by exposure to texts into which particular grammatical endings had been seeded (following a line explored in Zervakis & Mazuka 2013). The results partially support our hypothesis that this is the case, although there seem to be competing mechanisms at work in different cases. Consequently, the generally agreed facts about frequency may, in morphosyntax, entail other assumptions about the realities of categories that need further and more careful testing.

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Are morphemes cognitively realistic?

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Background

This talk aims to explore the extent to which the standard textbook definition of *morpheme* stands for a cognitively realistic category. I will start by suggesting three criteria that must be jointly satisfied for this to be the case:

(1) All items subsumed under the morpheme category must represent actual processing units.
(2) These processing units must involve a common neurofunctional signature not shared by other (potential) processing units (e.g., phonaesthemes such as *gl-* in *glimmer* and *glitter*, pseudo-morphemes such as *hard-* and *-ly* in *hardly*, short bimorphemic words, frequent n-grams, etc.).
(3) Greater closeness within the standard linguistic taxonomy of morphemes must correlate with greater similarity in terms of neurofunctional substrates (i.e., members of a given morphological subcategory like *derivational morphemes* must be neurofunctionally more similar to each other than they are to members of other subgroups, e.g., *inflectional morphemes*). This condition must hold across all granularity levels posited by the standard taxonomy (e.g., free vs. bound morphemes, derivational vs. inflectional morphemes, verbal inflectional morphology vs. nominal inflectional morphology, etc.) and, where applicable, across languages.

With these criteria in mind, I will review some studies which, in spite of their admittedly scant and rather fragmentary nature, tend to suggest that the category of *morpheme* as it stands is not cognitively realistic.

Thus, it does not seem to be the case that everything that qualifies as a morpheme from a linguistic point of view is treated as a processing unit in its own right by actual language users. Access to linguistic morphemes should rather be seen as a gradual matter which depends on a multitude of subject-, item-, and context-specific factors that the literature has only recently begun to identify (Blumenthal-Dramé 2012). Moreover, it has variously been suggested that the behavioural and neuro-functional correlates of certain non-morphological strings (e.g., pseudo-morphemes and phonaesthemes) are not always distinguishable from those of morphemes, indicating that morphemes might not constitute a distinctive mental category (Bergen 2004, Rastle & Davis 2008). Do morphemes (or, for that matter, the subset of morphemes actually accessed) cluster into mental subgroups which are isomorphic with the received linguistic taxonomy? This question has been neglected so far, possibly because even the beginning of an answer would afford a large-scale project involving huge samples of items and participants as well as high-resolution neuroimaging techniques that might still be beyond current technical capabilities.

The talk will conclude by discussing whether the notion of *morpheme* could be saved by qualifying it with ideas drawn from the usage-based and cognitive linguistics toolbox (in particular, the notions of prototype, emergence, and probabilistic grammar), or whether it should rather be abandoned altogether, at least by linguistic theories purporting to be cognitively realistic (Ibbotson 2013; Vigliocco et al. 2011).

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The Radial Category as an Emergent Structure

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Background

The structure of radial categories has typically been deduced by researchers, combining insights from data with intuitions about relationships among the members of a category. An exception is Gries (2006), who uses corpus data to support both the selection of a prototype and the structure of a radial category. The present study is innovative in the way that the radial category of uses of Old Church Slavonic *byti* 'BE' emerges objectively from the data, including the identification of nodes (sets of constructions that pattern similarly) in the category and the relationships among them. This finding is a confirmation of the cognitive commitment to the radial category structure and thus supports the claim that linguistic categories are cognitively real and can be objectively accessible.

The linguistic concept of the radial category is motivated by research in psychology (Rosch 1973, 1978) and neurobiology (Churchland 1995) indicating that human beings store and access knowledge in categories with a specific structure. The radial category model does not necessarily exclude an exemplar approach to categorization, since exemplars that closely resemble each other can yield a schematic representation similar to a prototype (Murphy 2002, Taylor 2012).

If we assume that linguistic cognition uses the same basic mechanisms as human cognition, it is reasonable to expect that linguistic categories, which are typically polysemous, are also radial categories. Lakoff (1987) and Taylor (1995) present classic examples of radial categories and their structure. The radial category is a central concept in the framework of cognitive linguistics, which has attracted considerable attention among linguists (cf. Lakoff 1987, Geeraerts 1987, Croft 2001, Fauconnier and Turner 2002, Goldberg 2006, Langacker 2013).

We examined 2,428 attestations of *byti* 'BE' in a dataset extracted from the Old Church Slavonic (OCS) portion of the PROIEL corpus (http://foni.uio.no:3000/) in order to address an old controversy concerning the identity of this verb as either a single verb or an aspectual pair. This controversy was sparked by van Schooneveld (1951), who argued that *byti* is in fact an aspectual pair of verbs (the numerous supporters of and dissenters from this claim cannot be cited in this abstract for lack of space). We performed both constructional profiling (cf. Janda & Solovyev 2009) and grammatical profiling (cf. Janda & Lyashevskaya 2011) analyses of *byti.* Rather than using a pre-determined set of constructions, we allowed patterns to emerge directly from the data, yielding ten constructions describable in terms of their syntactic characteristics. A correspondence analysis of the grammatical profile of *byti* in each construction shows that there are two central clusters of constructions representing personal copular, personal existential, positional, and "auxiliaroid" uses, and three constructions that are peripheral, representing auxiliary, existential impersonal, and copular impersonal uses.

Our correspondence analysis of *byti* constructions by grammatical profile shows exactly the structure of relationships we would expect to obtain for a polysemous verb like *byti*, namely a radial category. This result gives us a more coherent and informed analysis of this verb and the status of aspect in OCS. Our findings are of course limited to the available texts, however they also comport better with the subsequent development of *byti* in modern Slavic languages as a single imperfective verb. Furthermore, this study shows how a radial category network structure can be obtained by purely objective means.

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Do Historical Linguists Need the Cognitive Commitment? Prosodic Change in East Slavic

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Background

In this paper, I argue that the cognitive commitment is essential for an adequate analysis of the so-called yer shift, a prosodic change that originated in Late Common Slavic and spread to Old East Slavic in the 12th century (Isačenko 1970). The yer shift involved the lax vowels /ĭ, ŭ/, which disappeared or merged with /e, o/ depending on the prosodic environment. Simply put, /ĭ, ŭ/ disappeared unless they headed a trochaic foot aligned to the right edge of the word:

(1) (CŬCŬ) → COC, where () = trochaic foot, C = consonant, Ŭ = lax vowel (/ĭ, ŭ/), O = /o, e/

It is shown that a usage-based approach accommodates the yer shift as a number of gradual changes in the mental grammars of the speakers. The shift is analyzed as an example of prosodic skewing (Salmons et al. 2012), whereby caretakers speak more "clearly" in child-directed speech and children (mis)interpret emphatic vowels heading a foot as tense vowels. While the cognitive commitment is important for the understanding of the yer shift, it is important to point out that statements of sound laws such as (1) are not directly relevant for the cognitive commitment. Sound laws summarize changes that span over many generations, and are therefore not statements about processes in the minds of individual speakers or speech communities at any point in time. This does not, however, diminish the importance of sound laws such as (1) in historical linguistics.

In recent years, cognitive linguistics has experienced a quantitative turn (Janda ed. 2013), and with the advent of historical electronic corpora the increasing focus on quantitative analysis of corpus data has reached historical linguistics as well. While this development provides historical linguists with new and powerful tools, we must ask whether these tools take us closer to psychologically realistic analyses, as dictated by the cognitive commitment. The yer shift illustrates how a hypothesis that originates in a usage-based approach can be tested empirically against corpus data, thus illustrating a symbiotic relationship between empirical methods and the cognitive commitment. Emerging from the yer shift was a number of vowel ~ zero alternations. A case in point is /sŭnŭ/ 'dream', which became /son/, since the leftmost /ŭ/ headed the foot and therefore became /o/, whereas the rightmost /ŭ/ disappeared. The genitive singular of the same word lost the yer, as /sŭna/ turned into /sna/ without a vowel in the stem. Since the yer shift took right-aligned feet as its point of departure, it created many vowel-zero alternations in stem-final position. This gradually developed into a morphophonological principle whereby such alternations were only permitted stem-finally, but banned from other positions. It is hypothesized that we are dealing with a frequency effect (Bybee 2007); in stem-final position, where the vowel-zero alternation was frequent from the outset, it spread to new lexical items, whereas in other positions, where it was not frequent, it gradually disappeared. This frequency hypothesis is tested against data from two available electronic corpora, viz. TOROT and the Russian National Corpus (historical subcorpus). In this way, the yer shift testifies to the importance of empirical methods in historical linguistics, but at the same time indicates that the historical linguist should never lose sight of the cognitive commitment.

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Electronic resources:
The Russian National Corpus (historical subcorpus, www.ruscorpora.ru)
TOROT = Tromsø Old Russian and Old Slavic Treebank (http://nestor.uit.no/users/sign_in)

Convergence and divergence in Cognitive Linguistics: Facing up to alternative realities of linguistic categories

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Background

Within Cognitive Linguistics, reference is sometimes made to an overarching commitment to integrate the study of language into a larger cognitive agenda, pointedly opposed to a "modular" understanding of language (cf. Langacker 1988; Lakoff 1990). Beyond this, there are additional kinds of deeply held beliefs within the field, whether or not they are labelled as "commitments" that influence the research which is being undertaken: a conviction about the central importance of experimental research with speakers; a conviction that usage-based (i.e., corpus-based) research is a particularly crucial kind of evidence for insights into language; a conviction that our linguistic categories should ultimately have some psychological foundation; etc. These more specific orientations can lead to quite diverse kinds of research findings. As a principled way to deal with multifarious research outcomes, the notions of *convergence* and *divergence* have emerged. Simply put, convergence occurs when the research outcomes from different methodologies and data types point to one and the same result and is taken to mean that we make progress as cognitive linguists. When this is not the case, we speak of divergence.

In this paper, we would like to problematize this preference for convergence as a larger research goal and our parallel discomfort with divergence. Our view is that both converging and diverging research outcomes have their proper place when it comes to advancing our knowledge about language. The preference for focusing on converging results can distort our understanding of language phenomena, comparable to how a tendency to look for too much successful replication in experimental work—the so-called "publication bias"—can lead to a distorted interpretation of the phenomenon under study (Francis 2012).

We illustrate these points by reference to the outcomes that emerge from applying different kinds of methodologies to the study of one English construction. We consider the question of which nouns are preferred as syntactic subjects of the verb ROAR, using a simple experimental methodology as well as a corpus-based methodology. For the experimental part, native speakers were simply asked to write out a sentence containing ROAR. Noun subjects of a verb use of ROAR in the resulting sentences were counted and the results pointed to one overwhelming finding: the word *lion* is by far the most preferred subject. For the corpus-based part of this study, we applied some familiar measures of association strength utilizing COCA (the whole corpus as well as its main sub-genres). In addition, a Behavioral Profile analysis was carried out of ROAR and some semantically similar verbs. The corpus-based results do not point unequivocally (or at all) to the noun *lion* (or its semantic category [animal]) as the preferred subject (or semantic category) of ROAR.

We discuss the question of convergence vs. divergence with respect to these results and argue that the divergence of outcomes reflects quite different, but equally valid, kinds of linguistic realities (cf. Arppe & Järvikivi 2007).

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Early Action Words

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Background

In developmental psychology, there is evidence suggesting that nouns are easier to learn than verbs. While in the model by Hirsh-Pasek and Golinkoff (2008), it is suggested that the concept of the word that children acquire needs to be concrete (no matter whether it is a noun or a verb), recent studies in early word understanding rather suggest that common nouns (such as “spoon”) (Bergelson & Swingley, 2012; Parise & Csibra, 2012) are understood a few months before common verbs (such as “eat”) (Bergelson & Swingley, 2013). From these findings, it might be deduced that concepts underlying verb understanding might be more difficult to learn in general.

However, according to embodied cognition approaches, the comprehension of verbal expressions is linked to simulation involving perceptual, motor and affective contents; thus, simulations appear to be central to the representation of meaning (Barsalou, 2008). Similarly, in developmental approaches, Mandler (2012) suggested that early concepts capture the roles of objects, i.e. what the objects do and what is done to them. In this way, actions organize infants’ concepts (Mandler, 2006). Along these lines, some studies have revealed that children first use words in the context of their own actions (Harris et al., 1988). Werner and Kaplan (1963) suggest that initially, a dispositional schema as a form of first meaning emerges, which then becomes independent from a situation. Moreover, when applying nominals, “the child’s use was not related to a singly maternal use, but instead related to the common element in several different maternal uses” (Harris et al., 1988: 89). This shows that nominals “cumulate” a situational element and that action information is involved early. These findings thus provide support for our motivation to test early verb knowledge that might capture the nature of early concepts better than nominals.

We piloted our hypothesis in an eye-tracking study that replicates the procedure described in Bergelson and Swingley (2012) with two modifications: Firstly, we used different objects, which infants know from their everyday activities. Secondly, instead of nouns that are supposed to match the stimuli, in our study, the mothers provided verbs that can be associated with the presented objects.

We provide first results suggesting that early in their development, seven-to-ten-month-old infants are able to understand some verbs and refer them to object stimuli. We argue that in so-called preverbal infants, early concepts are open to “difficult” linguistic categories such as verbs, and are, therefore, not necessarily an exclusive match to nouns.

On linguistics categories as categories: The case of antonyms and synonyms

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Background

This corpus study addresses the question of the nature and the structure of antonymy and synonymy as categories in language. While quite a lot of empirical research using different observational techniques has been carried on antonymy (e.g. Roehm et al. 2007, Lobanova 2013, Paradis et al. 2009), not as much has been devoted to synonymy (e.g. Divjak 2010) and very little has been carried out on both of them using the same methodologies (Gries & Otani 2010). The goal of this study is to bring antonyms and synonyms together, using the same (semi-)automatic methods to identify their behavioral patterns in texts. We examine the conceptual closeness/distance of synonyms and antonyms through the lens of their DOMAIN instantiations. For instance, *strong* used in the context of WIND or TASTE (OF TEA) as compared to *light* and *weak* respectively, and *light* as compared to *heavy* when talking about RAIN or WEIGHT. In order to identify as many domains as possible for our synonyms and antonyms, we choose as our starting-point sets of both antonym and synonym pairs, and through their use we extract and cluster other words expressing properties of these various domains. Using an algorithm similar to the one proposed by Tesfaye & Zock (2012) and Zock & Tesfaye (2012), we mine the co-occurrence information of the pairs in different domains separately, measuring the strength of their relation in the different domains with the aim of (i) making principled comparisons between antonyms and synonyms from a DOMAIN perspective, (ii) enhancing the algorithm to mine co-occurrence information specific to given domains, and (iii) determining the structure of antonymy and synonymy as categories in language and cognition.

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A plea for converging evidence: the case of causal categories in discourse

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Background

The cognitive plausibility of linguistic categories adds value to our analyses of language use. That is, cognitive viability should play a role in evaluating an analysis. Moreover, analyses are to be preferred that are corroborated with different types of evidence supporting cognitive plausibility that converge. In this paper we will substantiate these claims at the level of discourse, where such categories have a crucial role to play: Coherence relations between sentences can be categorized in terms like positive versus negative, and causal versus additive. Here we focus on causality. In recent years several suggestions have been made that for a proper understanding of causality in discourse we also need an understanding of subjectivity. Causality and subjectivity are considered salient categorizing principles for producing and understanding natural discourse. Our central claim is that, together, these principles account for causal coherence and connective use, and play a pivotal role in explaining discourse representation. This hypothesis is tested in three ways, exploring (i) the cross-linguistic use of connectives in spoken and written discourse, (ii) the order in which children acquire connectives, and (iii) the role of coherence relations and connectives in on-line discourse processing as shown by eye-tracking studies.

Cross-linguistically, causal connectives occur in many if not all languages. The relations they express differ systematically across genres and media (Sanders & Spooren, 2015), and this variation can be described in terms of subjectivity (Stukker & Sanders, 2012). The exact way in which connectives express these differences varies across languages: Some languages have prototypical connectives expressing objective versus subjective relations (like Mandarin *youyu* versus *jiran*; Li et al., 2013), in other languages we find polyfunctional connectives like English *because*. The order in which connectives are acquired also reflects the relevance of causality and subjectivity: Causal relations are acquired later than additive and temporal relations, and subjective relations are acquired later than objective relations (Evers-Vermeul & Sanders, 2009). The online processing of causal relations is a third domain in which causality and subjectivity prove relevant: Interestingly, causal relations are processed faster than other types of relations (Graesser et al., 1994). Subjective causal relations in turn require longer processing than objective ones, as reflected in eye movement data studies (Canestrelli et al., 2013).

Together, these lines of research constitute the research strategy of converging evidence. We will argue why such a strategy is crucial to modern research on language and cognition.

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Templates in child phonology (and their relation to adult systems)

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Background

Evidence of individual phonological templates has repeatedly been observed in the word forms of children in the earliest stages of phonological development (Author & Keren-Portnoy 2013). The most striking forms are those in which the child more or less radically adapts the adult target, in different ways for different targets but with an apparent output shape or template as the implicit goal (e.g., <CVjVC>: *blanket* [bajak], *candle* [kajal], *farmer* [fajam], Priestly 1977). In addition to limited lexical experience children are constrained in their early word production by articulatory or planning limitations and, equally importantly, by phonological memory, which develops in tandem with production experience (Keren-Portnoy et al. 2010). Accordingly, production is largely restricted to one or two simple CV syllables, the outcome of immature neurophysiological connections supported by vocal practice, with sequences of syllables restricted mainly to cases of consonant or vowel repetition (harmony) or both (reduplication), or to a fixed melody (low vowel - high vowel, front consonant - back consonant), all of which facilitate production by limiting the range of possibilities to be retained and planned. In short, both planning for production and memory for novel forms are well served by repetition of an established motor routine, based on either harmony or melody (Menn 1983).

Children's early word forms include only a small proportion of the adult phonological inventory in any language and the syllables they produce are highly similar cross-linguistically. However, the structures of the adult language affect the children's overall word shapes, resulting in clear typological constraints on templates by language. For example, children acquiring English produce more monosyllables and more codas (so CVC templates, often with final fricative or nasal) than children acquiring Romance languages; the word-initial consonant is rarely omitted in English but the word shape VCV is common in languages with either (a) iambic accent (French, Hebrew) or (b) perceptually salient word-medial geminates, which attract child attention at the expense of the onset consonant (Estonian, Finnish, Hindi, Italian). The initial limitations on children's word forms are overcome through child 'selection' of adult targets that afford a match to existing patterns (Majorano et al. 2013). As the children gain production practice and lexical experience, however, children adapt more challenging adult forms to fit their individual templates while at the same time gradually expanding their production capacities (Author under review).

The effects seen in child templates recall the poetic principles of repetition, rhythm, alliteration and assonance; arguably, memory limitations are at the root of these principles in both spheres (especially as regards oral poetry). Similarly, the kinds of prosodic constraints that characterise adult templates (e.g., Smith & Ussishkin 2013) are also represented to some extent in the child data. There is no evidence that these prosodic constraints, where they obtain in the ambient language, actually support acquisition, however. For example, there is no evidence of differential rates of child phonological advance in relation to the extent of templatic patterning in the adult language. Alternatively, we can look for principles – such as sensitivity to rhythm – that might explain not the function of templates but their origins in deeper aspects of speech perception, production and representation that could affect adults and children alike, despite the obvious differences in their knowledge base. To this end, more extended study of both adult and child templates seems warranted – and joint theoretical attention to the two research domains could only be beneficial.

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The Embodied Basis of Constructions in Greek and Latin: Toward a Cognitive Classical Linguistics

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Background

Theories of "embodiment" in cognitive linguistics and related disciplines have led to major advances in the understanding of linguistic meaning. A key claim is that the meanings of many linguistic units correspond, directly or through metaphorical extension, to recurring patterns of sensorimotor experience or "image schemas", whose susceptibility of visual and kinesthetic transformations in mental space also accounts for synchronic and diachronic variation (Lakoff and Johnson 1980, Johnson 1987, Lakoff 1990, Gibbs 1994). Furthermore, units at all levels of linguistic structure – including grammatical constructions – are taken to be meaningful, insofar as these can be described in terms of symbolic pairings of schematic phonological or syntactic forms and conventionalized semantic or pragmatic meanings (Goldberg 1995, Kay and Fillmore 1999, Nikiforidou 2009). Insights of the cognitive interdiscipline have scarcely penetrated Greek and Latin linguistics, however, where formalist (Chomskyan) and functionalist (Dikian) approaches continue to dominate. Yet the rich metaphorical expression, highly complex grammatical structure, as well as elaborate – and very often multiple, seemingly functionally equivalent – syntactic constructions that characterize the classical languages would seem to provide fertile ground for cognitive linguistic analysis.

This panel aims to bring Latin and Greek linguistics into more thoroughgoing dialogue with cognitive linguistics, toward the development of a "cognitive classical linguistics". In particular, we aim to demonstrate the potential of cognitive theories and methods to inform our understanding of the semantic or pragmatic values of Greek and Latin constructions. The papers that make up the session, from an international group of scholars, fulfill this aim by analyzing specific form/meaning pairs at different levels of linguistic encoding in Greek and Latin (as well as in Sanskrit, to ensure a comparative perspective within Indo-European), especially at the interface of lexical and morphosyntactic structure (cf. Freid and Östman 2004). Covering a wide range of linguistic phenomena, the papers apply insights from Langacker's cognitive grammar (2008) to elucidate aspects of Greek's system of particles, its tense semantics, and its verbal encoding of motion, and to address the usage of spatial prepositions in Greek's vestimentary vocabulary, and in Latin's reversive constructions and those constructions expressing fear, from the perspective of Lakoffian metaphor theory. In this way, the panelists not only support with evidence from historical languages cognitive linguists' claims about the universality of certain cognitive mechanisms in guiding diachronic as well as synchronic sense variation, but also introduce into classical linguistics theories and methods for accounting for the semantics of Greek and Latin constructions in terms of established, brain-based mechanisms of meaning extension.

Contributors

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Annemieke Drummen. University of Heidelberg. A construction-grammar approach to ancient Greek particles
Vassiliki Nikiforidou, Thanasis Georgakopoulos and Anna Piata. University of Athens, Greece. On the encoding of motion events in Ancient Greek: Towards a constructional analysis
Arjan A. Nijk. VU University, Amsterdam. Non-past usages of the Ancient Greek aorist: A cognitive grammar view
Maria Papadopoulou. Ministry of Education, Operational Programme for Life Long Learning, Greece. The Role of Prepositional Locatives in the Greek Garb Vocabulary Cluster
Daniel Riaño Rufilanchas. Departamento de Filología Clásica, UAM. The spatial basis of the organization of the verbal case system in Classical Greek"

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Reversive constructions in Latin: the case of re- and dis-

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Background

Every human being, since childhood, frequently speaks about changes of states, in particular about the actions of doing or undoing something. This rough consideration can motivate the frequency in everyday language of reversive verbs, that is, verbs denoting motion or change in the opposite direction, thus indicating the moving from one reference state (conveyed by the lexical base) to some prior state of affairs (cf. Cruse 1986). The same consideration can also explain the consequent productivity of the morphological means through which languages form reversive verbs starting from reference states, i.e. states that have been entered as a result of some prior action (Clark et al. 1995: 635).

In this paper I attempt a description of the crucial role played by prefixation in forming such verbs in Early Latin. More specifically, I propose a cognitive account (Langacker 1987; 1991) on *re-* and *dis-*verbs, e.g. *cludo* 'to close'/ *recludo* 'to open', *velo* 'to cover'/ *revelo* 'to uncover', *cingo* 'to encircle, gird'/ *discingo* 'to ungird', *suadeo* 'to persuade'/ *dissuadeo* 'to dissuade', based on the scrutiny of the entire Plautine corpus and Cato's *de Agricoltura*.

Re- and *dis-* are both external/adverbial prefixes (Di Sciullo 1997), i.e. they provide specifications external to the Verbal Phrase, have scope on the entire event, and do not affect the Aktionsart of the verb. In this respect, they differ from internal prefixes (e.g. *ad-*, *in-*, *per-*), which are part of the internal structure of the event and indicate, for example, the direction in space. Moreover *re-* and *dis-* are 'proper' prefixes, whereas most Latin preverbial elements are also instantiated in the free form, i.e. they can behave as prefixes or prepositions depending on their syntactic position.

Despite these common features, *re-* and *dis-* exhibit significant differences as to the manner in which they come to a reversive function, and these differences can be traced back to the basic conceptual import of the two prefixes. While *dis-* is schematically connected with the idea of separation/division into two parts (cf. Proto-Italic **dis-* 'in two, apart' and Indo-European **dwi*(*s*) 'two, into two', de Vaan 2008:171-2; see also Ernout & Meillet 1959: 176), *re-* basically refers to a circular trajectory which connects a point already reached (reference point) to the starting point, thus resulting in a backward motion (cf. Proto-Italic **wred-*, which Brugmann 1909 connects with *verto* 'to turn'; see also Ernout & Meillet [1959] 2002: 565-6). On the basis of this semantic description, I intend to analyze the semantic network of re- and dis- in Early Latin and the role of their conceptual structure in the spread from basic spatial values to the reversive function.

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A construction-grammar approach to ancient Greek particles

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Background

Describing ancient Greek particles from a construction-grammar (CxG) perspective has the potential to be highly beneficial both for our understanding of these elusive words and for this cognitive linguistic field in general. I will illustrate this claim by analyzing the polyfunctional particles *kaí*, *gár*, and *dê*, taking my material from classical tragedy and comedy (fifth century BCE).

For our understanding of Greek particles, CxG is highly illuminating, because it clarifies which interpretation is the most appropriate for a specific instance, by identifying the specific co-textual features that determine each particle's constructions. That is to say, a CxG approach makes it clear that the different uses of a single particle are actually different constructions, which include both the particle itself and some specific feature(s) of its co-text (on the basic insights of CxG, see e.g. Croft and Cruse 2004; Bybee 2010).

For CxG in general, ancient Greek particles form an ideal testing ground of its insights and methods. The reasons are that these words are polyfunctional, and that they have been extensively studied. Since 1588 no fewer than fourteen monographs have appeared on ancient Greek particles (e.g. Hoogeveen 1769; Bäumlein 1861; Denniston 1934), not to mention the numerous shorter references. These works attest to the fact that each particle has several distinct functions or uses.

So far, CxG has hardly been applied to the study of ancient Greek particles (an exception is Koier 2013 on the particle *pou*, "surely"), even though already the ancient grammarian Apollonius Dyscolus (second century CE) recognized the importance of the co-occuring words when interpreting particles. He spoke of *sussemaínein* "co-signifying" in his description of the category of Greek *súndesmoi* "combiners." However, Apollonius' insights are usually not taken up in modern analyses of particles.

A clear example of a polyfunctional particle is *kaí*, a highly frequent form that generally marks a connection or link, similar to English "and." In one of its constructions *kaí* is an isolated unit, projecting an elaborate move. When connecting two semantically and morphologically similar items, *kaí* marks a specification. In a third construction, *kaí* indicates that a question "zooms in" on the information of the preceding utterance. A fourth *kaí* construction is the particle cluster *te kaí*, which marks a close link between two items as well as a connection to shared knowledge. Finally, when there are no two items that *kaí* might connect, we are dealing with a construction in which the particle means "also" or "even."

Other examples of different constructions involving the same particle are those of *gár*, which signal different kinds of explanations or an indignant inference. Similarly polyfunctional, *dê* marks either intensification or several evidential values. For all these constructions, specific features of the co-text can be identified in order to distinguish between them. That is, the polyfunctionality of Greek particles is best explained as the participation of each particle in several distinct constructions.

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A constructional approach to the polysemy and use of motion verbs in Ancient Greek

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Background

Motion verbs encode a fundamental domain of experience; hence, they cross-linguistically belong to basic vocabulary, they are frequently used in different texts and contexts while at the same time they lend themselves to extensive non-literal, metaphorical uses. In Ancient Greek, in particular, they have been hitherto investigated either from a syntactic-typological perspective or from a semantic one (see, e.g., Skopeteas 2002; Nikitina 2013). However, no attempt has been made to approach motion verbs in terms of constructions, that is, as conventionalized pairings of meaning and form (e.g., Fillmore, Kay & O'Connor 1988, Goldberg 1995, Fried & Östman 2004).

The present study is concerned with the encoding of motion events in Ancient Greek (Homeric and Classical Greek), aiming to offer a novel, full-fledged analysis of motion verbs using the constructional framework. Specifically, we analyze three verbs belonging to different semantic classes of those generally recognized for motion (see Talmy 2000), so that we cover a diverse range of syntactic patterns and semantic collocations: (a) directional verbs (*eîmi/ érkhomai* 'come, go'); (b) caused motion verbs (*bállō* 'put, throw'); and (c) manner of motion verbs (*baínō* 'walk'). The particular verbs are extracted from the searchable electronic corpus TLG (*Thesaurus Linguae Graecae*) and have been selected on the basis of frequency, establishing as a prerequisite that in each diachronic stage they occur over 100 times in the corpus, while they cover such genres as epic poetry, tragedy, philosophy, history and comedy. Using a large amount of corpus data, we seek to identify the prototypical meaning for each verb in both stages on the basis of specific criteria, including frequency. In contrast to previous work, we do not focus on isolated senses of these verbs but on contextualized uses including morpho-syntactic, semantic, pragmatic and discourse-textual features that jointly constitute the relevant constructions for these verbs. Given such constructional prototypes, we further explore the rise of extended metaphorical uses, investigate the effect of cultural and text-type/genre considerations (also included in constructional specifications), and trace the changes in the prototypes and the polysemy networks from one stage to the other.

We argue that Construction Grammar can contribute new insights to the synchronic and diachronic study of polysemy. In more general terms, the proposed analysis brings to the fore theoretical and empirical considerations suggesting that historical linguistics and classical studies can greatly benefit from cognitive/constructional approaches to language.

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The non-past uses of the Ancient Greek aorist: A Cognitive Grammar view

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Background

The Ancient Greek aorist indicative is morphologically a past tense. Normally it enters into competition with the past imperfect, the difference being aspectual (aorist: perfective, imperfect: imperfective). In certain contexts, however, it seems that the aorist refers to nonpast processes. Four of these uses are generally recognized: the 'tragic' aorist, with performatives; the aorist in hortative questions ('Why don't we…'); the generic aorist; and the future aorist. Two examples:

- 'Tragic' aorist: ***apṓmos****' hagnòn Zēnòs hypsístou sébas*. 'I **swear** by the holy majesty of Zeus the highest that that is not the case.' (Sophocles, *Philoctetes* 1289)
- Generic aorist: *rechthèn dé te nḗpios* ***égnō***. 'A fool **sees** a thing once it has been done.' (Homer, *Iliad* 17.32; 20.198)

While there is general agreement that such statements are not (really) about the past, there is no consensus as to how exactly this non-past interpretation of the entire utterance relates to the semantic value of the aorist. Is the non-past interpretation merely the result of a certain interaction between the regular past value of the aorist and the context (we might call this the *pragmatic* solution)? Or does the aorist actually have a non-past semantic value in these instances (the *semantic* solution)?

In this paper I will argue (taking my cue from Bary's 2012 work on the tragic aorist) that the aorist indicative can be used as a *present* perfective. It signals that the process referred to is conceived as bounded within the moment of speech. Present tense forms with perfective aspect are a cross-linguistic rarity because of the tension between the two categories. As Langacker (2011) explains, this due to a durational and an epistemic problem. The durational problem entails that most processes last longer than a speech moment; therefore these processes are not naturally presented as bounded (perfective aspect) within the moment of speech (present tense). The epistemic problem entails that we cannot generally predict when exactly something will occur. Usually when we initiate a description of a process, that process has already happened or started to happen. So again, it cannot naturally be presented as bounded within the moment of speech.

However, Langacker identifies a number of contexts in which the durational and epistemic problems do not arise, and where the use of a present perfective can thus be felicitous. Langacker shows that in these contexts the English simple present of perfective verbs can be used, while normally such forms cannot refer to the actual present (e.g. 'He mows the lawn' is ungrammatical as a description of a process actually occurring in the present). I will argue that it is exactly in the contexts described by Langacker that we find the non-past uses of the aorist, and that it is therefore likely that the aorist is used as a present perfective in these cases. Interestingly, this method also reveals a fifth type of non-past use that grammarians have not recognized: the aorist in simultaneous reporting.

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The Role of Prepositional Locatives in the Greek Garb Vocabulary Cluster

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Background

What is 'to dress' (or 'to clothe') in ancient Greek? The words that denote 'to wear' or 'dress in' and 'garment' are often compounds with the following prepositional locatives:

- *ἀμφὶ* (on either side, on both sides), e.g. *ἀμφι-καλύπτω* (to wear, lit. to cover both sides of the body), *ἀμπέχω* (< *ἀμφὶ* + *ἔχω* = to put on, lit. to have around);
- *ἀνὰ* (up, upward), e.g. *ἀνα-χλαινόω* (to clothe with a mantle), *ἀνα-βολή (*that which is thrown back over the shoulder, mantle), *ἀνα-βολάδιον* (mantle);
- *ἐν* (in), e.g. *ἐγχλαμυδόομαι* (to be wrapped in a cloak), *ἔναμμα* (< *ἐνάπτω*; garment, covering), *ἐνθετταλίζομαι* (to be wrapped in a cloak);
- *ἐπὶ* (on, upon); e.g. *ἐπί-βλημα*, *ἐπι-βολή*, *ἐπι-πόρπημα*, *ἐφ-άπλωμα*, *ἐφ-απτίς*, *ἐφ-εστρίς* --all denote 'cloth, garment' or a kind of garment;
- *περὶ* (around); e.g. *περι-έν-νυμι* (wear), *περι-βάλλω* (wear), *περι-βολή* (garment)

It is no news to experts in ancient textiles that Greek clothing consisted of lengths of linen or wool fabric, which was usually rectangular in shape. Outfits were usually not tight-fitting. They composed of outer and inner garments. Inner garments were shaped, folded and altered by belting at the waist, or chest. Outer garments came in a variety of shapes and lengths and were fixed by brooches for travel or other activities that required free use of the arms. The most common styles of outer outfits were: the simple wrap-around type of garment, the open-front type of garment, the fixed-by means-of-a-brooch type of garment. The fabric was placed around the body, wrapping or surrounding it; thus, it was draped, not tailored and little or no stitching or sewing was required; it was fixed by *fibulae*, not tied. This wrapping around the body type of wearing is, I argue, an element that reflects on an important aspect of the Greek language.

This paper will examine the use of prepositional locatives as prefixes of garment terms (nouns e.g. *ἔν-δυμα*, verbs e.g. *ἀναβάλλω*, and multi-word constructions due to *tmesis,* e.g. *εἵματα ἕσσε περὶ χροΐ Od.* 16. 457). Whereas lexicography often categorizes linguistic items in a way which implies a box or file-like 'storage', cognitive semantic analysis can help tease apart things that would otherwise go unnoticed. Embodied cognition and image-schema theory can help explain how language conveys meaning through situated body practices. In this paper I suggest a way to examine this dress-related vocabulary cluster and show that the spatial conceptualization of the act of dressing is construed as 'around-ness' and 'containment' in Greek. What I ultimately hope to show is that the Greek textile and garb terms are "good to think with" as they illustrate, in the most immediate way, the extricate connections and analogies that human languages make between corporeal experience and patterns of thought.

Key words: prepositions, garment vocabulary, Greek, aroundness

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The spatial basis of the organization of the verbal case system in Classical Greek

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Background

Unlike the situation in languages like Spanish, where marking of the direct object is motivated mainly by the degree of animacy and definiteness of the constituent, the main parameter responsible for case marking of the core objects in Ancient Greek is object affectedness (Riaño 2006). Yet, there remains to explain the motivation for the selection of the alternative case marking (genitive or dative) instead of the accusative in situations of low object affectedness. From our point of view, this selection: (a) results from the successive interplay of the hierarchies of (object) affectedness, (subject) agentivity and secondarily from verbal aspect and object's animacy and definiteness. (b) The resulting constructions can be explained as expansions or elaborations of a short number of image schemas that underlie the semantics of each case.

For instance, semantic relations like those expressed by means of "acquisition", "possession" or "appropriation" verbs can be reduced to different interactions of the participants in dynamic spatial schemas where one of the participants is assigned an "area of domain" into which, or out of which a differentiated participant can move. The case marking of the moving participants involved in such scene depends on the origin and/or direction of the movement, and thus the participant deprived from a possession is marked with the genitive case, coding an ablative movement.

The full complexity of the spatial schemas that a specific case can convey can be explained by the integration into the schema of a very short number of primitive elements like "animacy" or "volitionality" that can be hypothesized as a requirement for the transition from pure spatial mental schemas to more complex relational spaces (Fauconnier 1997, 2002, Gattis 2001).

We examine the situation of Ancient Greek from 5th century BC to 1st century AC. We used a large, digitally tagged corpus to test our hypothesis.

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Toward a cognitive classical linguistics

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The lexicon and beyond: new routes from the Historical Thesaurus of English

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Background

We will use a variety of lexical datasets, texts and theoretical approaches to demonstrate the potential of the *Historical Thesaurus of English* (HT) for linguistic research. Based on the second edition of the *Oxford English Dictionary* with supplementary Old English materials, the HT database contains 793,742 word forms in 225,131 semantic categories, hierarchically organised into conceptual domains such as Emotions or Politics. Automatic routines enable links between categories to be identified and quantified through tracking of recurrent word forms. These routines have assisted exploration of the development of systematic metaphors throughout the 1300-year recorded history of English in HT's daughter project, Mapping Metaphor with the *Historical Thesaurus*, which forms the basis of Papers 1-3. A second new project, the basis of Papers 4-6, is SAMUELS (Semantic Annotation and Mark Up for Enhancing Lexical Searches), which incorporates the HT database into programs designed to disambiguate polysemous word forms in texts. It includes text-based pilot projects developing Semantically-Oriented Corpus Linguistics (SOCL). Both projects were funded by the Arts and Humanities Research Council and completed in March 2015.

Paper 1 introduces the session as a whole, and demonstrates the online 'Metaphor Map' of English created as part of the Mapping Metaphor project. It uses the example domain of 'Weather' to explain the project's theoretical underpinning and methodology, and to illustrate changing metaphorical usage in a particular domain over time. Paper 2 takes data from Mapping Metaphor to investigate a feature of language change: how and why some metaphors become historical, i.e. the literal senses are lost while the metaphorical senses remain in the linguistic system. Its key question is whether lexical borrowing is a significant factor in this phenomenon. Paper 3 looks at evidence from source domains such as the Supernatural and target domains such as Appearance and Disease. It questions assumptions about 'concrete' and 'abstract' categories and proposes a theory of possible worlds to describe connexions between the 'real' and the 'unreal' at different time periods.

Paper 4 uses the SAMUELS semantic tagger and insights from Relevance Theory to describe a new method of constituting and working with the input spaces of Conceptual Blending analysis; this provides a rigorously data-driven approach to the description of the process of blending. Paper 5 reports on searches of the 2.3 billion word Hansard corpus, starting from HT categories relating to trade unions, and examining what lexical links reveal about semantic patterning and political attitudes. Paper 6 identifies and discusses ways of expressing aggression found in data from Hansard, the EEBO-TCP corpus of 40,000 Early Modern English books, and Old Bailey proceedings, with input from historical pragmatics and a particular emphasis on metaphorical usage.

Contributors

Wendy Anderson and Carole Hough. University of Glasgow. Through the mists of time: new perspectives on English metaphor

Kathryn Allan. University College London. Mapping historical metaphor: *surprising* and *astonishing* developments

Christian Kay and Ellen Bramwell. University of Glasgow. Giants among men: the real and the unreal in diachronic metaphor analysis

Marc Alexander and Fraser Dallachy. University of Glasgow. Populating input spaces: Conceptual Blending and the *Historical Thesaurus of English*

Lesley Jeffries, Jane Demmen and Brian Walker. University of Huddersfield. The lexis of labour relations in Hansard across time: perspectives from the *Historical Thesaurus of English*

Dawn Archer and Bethan McCarthy. University of Central Lancashire. Mapping *aggression* over time using the *Historical Thesaurus of English*

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Through the mists of time: new perspectives on English metaphor

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Background

In addition to presenting research into changing metaphorical patterns across the history of English, this paper serves as an introduction to the theme session 'The lexicon and beyond: new routes from the Historical Thesaurus of English'. The session brings together a number of projects, all of which take a highly data-driven approach to theoretical issues surrounding the study of the lexicon of English, and all of which exploit the unique dataset of the Historical Thesaurus of English (HT).

This paper will set out the aims, methodology and theoretical underpinnings of the first of these projects, 'Mapping Metaphor with the *Historical Thesaurus*' (funded by the UK Arts and Humanities Research Council from 2012 to 2015, see www.gla.ac.uk/metaphor). The Mapping Metaphor project has established a near-comprehensive picture of the place of metaphor in English over a period of some thirteen centuries, from the Anglo-Saxon period to the present day. Taking as its starting point that metaphor – a form of systematic connection between semantic domains – can be identified through patterns of lexical overlap between the semantic categories contained in a thesaurus like the HT, the project draws on a combination of computational and manual analysis to pinpoint all of the significant metaphors in the recorded vocabulary of English.

We will briefly demonstrate the 'Metaphor Map' resource which forms the major public-facing output of the project. The Metaphor Map features a dynamic, web-based interface that enables users to view and explore metaphors at different levels of specificity through a radial convergence visualisation. A top-level view shows metaphorical connections between 37 superordinate level categories (such as The world, Mental capacity, and Communication), while a drill-down view shows those between around 400 basic-level semantic categories (such as Body of water, Foolishness, and Correspondence and telecommunications). Users can also click on individual connections to go to 'Metaphor cards' which summarise the metaphor, giving example words which instantiate the connection, and information about direction and dates of metaphorical transfer.

The final part of the paper will take the semantic category of 'Atmosphere and weather' to illustrate the functionality of the Metaphor Map and highlight patterns of changing metaphorical connections over time. Weather is a particularly productive source category for metaphor, with connections to over one third of the other semantic categories, including Age (*hoar*, *frosty*), Behaviour (*frostily*), Excitement (*gusty*, *torrential*) and Sexual relations (*sultry*). Less commonly, Weather is a target category, while some connections are bi-directional, as with Food (*slobber*, *bite*) and Ill-health (*breathless, foggy*). A number of the connections can be traced back to the Old English period, through lexical items such as *wind*, *storm* and *mist*. Many other metaphors are much more recent, however, and overall a much weaker presence of metaphor is visible in our Old English data. We argue that this is not primarily attributable to the relative paucity of data, but that it reflects the changing world-views that are also highlighted elsewhere by our results.

Mapping historical metaphor: *surprising* and *astonishing* developments

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Background

The Mapping Metaphor project identifies mappings between concepts, and shows which domains are or have been highly metaphorical in nature. As the project description notes, it is highly successful at showing 'innovations in metaphorical thinking at particular periods or in particular areas of experience'. This paper examines the opposite process, obsolescence, and considers how and why some linguistic metaphors become historical: that is, how and why the literal senses of some metaphors are lost while the metaphorical senses remain in the linguistic system. For example, the lexeme *amaze* is recorded in the sixteenth century with the meaning 'physically stun', reflecting its etymological meaning, but this appears to be obsolete by the mid-seventeenth century; only the metaphorical meaning 'surprise greatly' survives into the present day. One factor that seems significant is borrowing. Existing research (Author 2014, Author forthcoming) suggests that many loanwords are borrowed with both literal and metaphorical meanings, but that the literal meanings are rare or restricted from their first attestation in English. This paper uses data from the Mapping Metaphor project, taking as a starting point lexemes for the concept 'Surprise, astonish'. It aims to establish with more certainty the extent to which borrowing can account for the phenomenon of historical metaphor, or whether other factors are more or less significant.

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Giants among men: the real and the unreal in diachronic metaphor analysis

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Background

Cross-linguistic analysis of metaphor raises interesting questions about representations of world-views in language. This is equally true of synchronic analysis of different languages and varieties, and of diachronic analysis of the development of metaphors over a period of time. The Metaphor Map of English, developed using data from the Historical Thesaurus of English, provides us for the first time with a comprehensive, systematic overview of the lexical basis of metaphor in English from Old English to the present-day. Using its data enables us to investigate linguistic and metaphorical change alongside changes in the beliefs and understanding of speakers during the 1300-year recorded history of the English language, and to suggest ways of representing these changes.

The Metaphor Map as a whole contains 418 separate conceptual categories with thousands of metaphorical links between them. Our focus will be on the category 'Supernatural', which contains general terms for the concept alongside more specific sub-categories for areas such as magic and mythical creatures. The Metaphor Map shows that the category as a whole links metaphorically to 119 other conceptual areas in English. There are 32 strong category-level links (e.g. between the Supernatural and Emotion) which, we will argue, show evidence of systematic metaphor, and 87 weaker links which demonstrate a lesser degree of metaphorical connection. The strong links cluster around categories in the physical and mental worlds, with far fewer linking to concepts dealing with social organisation. The paper will look at evidence from some of these systematic links, including target domains such as Morality, Appearance and Disease.

Our choice of the Supernatural as a focus will enable us to examine linguistic evidence for conceptions of the real and the unreal at different periods in history. Understanding of supernatural beings and practices has changed considerably during the period covered by the Metaphor Map. Creatures such as demons, giants and ghosts, now generally consigned to the realm of the imaginary, are considered to be inhabitants of the physical universe in the world-views of previous generations, with consequent effects on human behaviour and conditions such as illness. These are sometimes positive, more often malign. Divergent world-views raise questions about how we interpret apparently metaphorical links, such as pathways from concrete object to abstract concept. Giants, for example, are mythical creatures without material existence, yet the term is later applied to large people and objects and then again to the more abstract concepts of size and importance. Similar pathways can be traced for terms denoting other mythical creatures and locations, such as the link between heaven as the sky, and the physical abode of real gods in the belief system of many centuries, and the metaphorical use of the term for the condition of supreme happiness. Tracing such links allows us to reflect on changing world-views and consequent changes in linguistic expression, and to pinpoint when such changes occurred. In doing so, the paper will investigate whether theoretical positions adopted in approaches such as linguistic relativity, conceptual blending and possible worlds can help to clarify our understanding of metaphor and historical change.

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Information about Mapping Metaphor is available at www.gla.ac.uk/metaphor; a beta version of the Metaphor Map can be found at http://mappingmetaphor.arts.gla.ac.uk/test-site/final/

Populating input spaces: Conceptual Blending and the *Historical Thesaurus of English*

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Background

This paper describes a new method for the problem of accurately identifying input spaces (or semantic domains) for the conceptual blends created by a text. In particular, it uses the *Historical Thesaurus of English* (HT; Kay *et al* 2014) as a source of information alongside Relevance Theory for the identification and labelling of input spaces in a conceptual blend, and applies this new information and methodology to the analysis of popular science texts. As the HT is broadly modelled on prototype theory, we assert that semantic domains and mental spaces can be accurately mirrored in HT categories, and will demonstrate this in the present paper.

The discoursal creation of any particular space is signalled by a range of linguistic expressions which Gilles Fauconnier calls space builders, 'overt mechanisms which speakers can use to induce the hearer to set up a new mental space' (Fauconnier and Sweetser 1996:10). We take in this paper as axiomatic that each noun phrase in a text has the potential to be a space builder, and that a reader applies a pragmatic judgement to judge, in the process of meaning construction, if the new entity has a strong relevant link to the preceding discourse or if it is likely to constitute a departure from the text which justifies a new mental space. (Fauconnier's early work creates a more detailed schema of space builders, but for our present purposes categorisation of these is unnecessary.) We therefore employ in this paper the SAMUELS semantic tagger, a new resource in corpus linguistics based on the HT, to identify the potential space builders in any given text. To decide which of these are actually space builders and which are elements in an existing space, we use Relevance Theory (RT), a cognitive approach to pragmatics in the Gricean mould which considers the principle of relevance to be paramount in the interpretation of discourse (Sperber and Wilson 1995). RT's main assertion that 'an input to a cognitive system is relevant when on the basis of existing information the input yields new cognitive effects' (Tendahl and Gibbs 2008:1831) has a clear applicability to the problem of when to identify a referring expression as a new space; new input spaces are those which do not have relevance to previous input spaces. Our methodology therefore treats all noun phrases as elements in a discourse which can be relevant or not relevant to earlier noun phrases, and are thus either additional elements in an input space or a new input in their own right.

As a test case, in this paper we apply this new technique to three popular science texts which create complex blended spaces in the pursuit of explaining scientific concepts to non-specialists. The texts we analyse require the reification of abstract concepts (prime number theory, string theory, and cosmological physics) into concrete ideas through conceptual blends which set up an analogy with the physical world, and we demonstrate the ways in which they create this reification. These texts are of sufficient complexity that they pose a challenge to analyse in the standard blending method.

Overall, the paper demonstrates a method of constituting and working with the input spaces of conceptual blending analysis through the SAMUELS *Historical Thesaurus* tagger, in order to provide a new and data-driven approach to the analysis of conceptual blending.

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The lexis of labour relations in Hansard across time: Perspectives from the HTE (*Historical Thesaurus of English*)

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Background

The concept of labour relations (the notion that both employers and workers have rights and responsibilities which can be negotiated using the collective bargaining power of trades unions) emerged gradually as a result of the changes brought about by the industrial revolution, and evolved as political attitudes changed during over the last few hundred years of British socio-political history. This paper addresses the research question: how is the relationship between employers and members of the workforce constructed in UK parliamentary language over time? Our data is the Hansard Corpus (1803-2005), a 2.6 billion-word corpus containing transcriptions of debates in the UK House of Lords and House of Commons.

Our Hansard Corpus data benefits from the annotation of meaning and sense categories with the Historical Thesaurus Semantic Tagger (HTST), developed as part of the ESRC- and AHRC-funded Semantic Annotation and Mark-Up for Enhancing Lexical Searches (SAMUELS) project (grant reference AH/L010062/1). This new software tool, based on the UCREL[6] Semantic Analysis System (USAS) tagger (Rayson et al. 2004), is substantially enhanced by the incorporation of the *Historical Thesaurus of English* (HTE). It affords much more nuanced distinctions between word meanings and senses, including dates of possible meanings, than has been achievable with USAS (Alexander et al. submitted).

Using the semantically-annotated version of Hansard, we carry out a diachronic investigation of the lexical items populating relevant sub-categories of the HTE semantic category 03.11 (Occupation and work). We use the quantitative output from this analysis to plot the lexis of labour relations in House of Commons debates across time. This quantitative starting point provides a focus for and informs a more detailed, qualitative analysis of the perspective of parliamentarians on landmark events and defining periods in the history of labour relations in Britain (for example the 1926 General Strike, and the 1978-1979 “Winter of Discontent”).

This study builds on previous research into the textually-constructed and emergent meanings of words in newspaper reporting during the time when Tony Blair was prime minister of the UK (Jeffries & Walker 2012), and work on the representation of trades unions and their members in the UK press[7]. The former study found that words such as *spin*, *choice* and *terror* became culturally significant and took on particular meanings during the Blair period. The latter study demonstrated that the words *union* and *unions* persistently and consistently occur in close proximity to words describing negative and hostile emotions (e.g. *anger*, *fury*, *threaten*, *battle* and *attack*), constructing union activity as warlike actions. Additionally, union leaders were found to be labelled in terms reflective of mediaeval hierarchies (e.g. as *chiefs* and *barons*).

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[6] UCREL=University Centre for Computer Corpus Research on Language

[7] See: https://www.hud.ac.uk/media/universityofhuddersfield/content/image/research/mhm/stylisticsresearchcentre/Unions21report12062013.pdf

Tracing verbal *aggression* over time, using the Historical Thesaurus of English

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Background

The work reported here seeks to demonstrate that automatic content analysis tools can be used effectively to trace pragmatic phenomena - including *aggression* - over time. In doing so, it builds upon preliminary work conducted by Archer (2014), using Wmatrix (Rayson, 2008), in which Archer used six semtags - Q2.2 (speech acts), A5.1+/- ('good/bad' evaluation), A5.2+/- ('true/false' evaluation), E3- ('angry/violent'), S1.2.4+/- ('im/politeness'), and S7.2+/- ('respect/lack of respect') - to examine *aggression* in 200 Old Bailey trial texts covering the decade 1783-93.

Having annotated the aforementioned Old Bailey dataset using Wmatrix, Archer (2014) targeted the utterances captured by the semtags listed above. This afforded her a useful "way in" to (by providing multiple potential indicators of) verbal aggression in the late eighteenth-century English courtroom. Using the 'expand context' facility within Wmatrix, and consulting the original trial transcripts, those incidences identified as verbally aggressive were then re-contextualised –allowing Archer to disregard any that did not point to aggression in the final instance. The success of this approach allowed her to conclude that automatic content analysis tools like USAS can indeed be used to trace pragmatic phenomena (and in historical as well as modern texts).

This approach was not without its teething problems, however. First, apart from those semtags which were used in conjunction with others, as portmanteau tags (e.g. Q2.2 with E3- to capture aggressive speech acts), the approach necessitated the targeting of individual semtags within a given text. The need to perform a time-intensive manual examination of the wider textual context thus made the use of large datasets prohibitive. Furthermore, there was a closely related problem concerning the tagset's basis in *The Longman Lexicon of Contemporary English* (McArthur, 1981), and its consequent inability to take account of diachronic meaning change. This tended to result in the occasional mis-assignment of words which have been subject to significant semantic change over time, including *politely, insult* and *insulted*. In one instance, for example, *politely* was used to describe the deftness with which a thief picked his victim's pocket! The need for manual checks to prevent such mis-assignments from affecting results further necessitated the narrowness of scope to which Archer (2014) was subject.

In the extension to this work, reported here, the authors present their solutions to these problems. These solutions have at their core an innovation which allows historical datasets to be tagged semantically, using themes derived from the Historical Thesaurus of the Oxford English Dictionary (henceforth HTOED). These themes have been identified as part of an AHRC/ESRC funded project entitled "Semantic Annotation and Mark Up for Enhancing Lexical Searches", henceforth SAMUELS[8] (grant reference AH/L010062/1). The SAMUELS project has also enabled researchers from the Universities Glasgow, Lancaster, Huddersfield, Strathclyde and Central Lancashire to work together to develop a semantic annotation tool which, thanks to its advanced disambiguation facility, enables the automatic annotation of words, as well as multi-word units, in historical texts with their precise meanings. This means that pragmatic phenomena such as aggression can be more profitably sought *automatically* following the initial identification of what the authors have termed a 'meaning chain', that is, a series of HTOED-derived 'themes' analogous to *DNA strings*.

This paper reports, first, on the authors' identification of 68 potentially pertinent HTOED 'themes' and, second, on their investigation of the possible permutations of these themes, and the process by which they assessed which themes in which combinations best identified and captured aggression in their four datasets.

The datasets used for this research are drawn from Hansard and from Historic Hansard; and are taken from periods judged to be characterized, in some way, by political/national unrest or disquiet. The datasets represent the periods 1812-14 (i.e., "The War of 1812" between Great Britain and America), 1879-81 (a period of complex wrangling between two English governments and their opposition, led by fierce rivals Disraeli and Gladstone), 1913-19 (the First World War, including its immediate build-up and aftermath), and 1978-9 ("The Winter of Discontent").

[8] The SAMUELS project runs from January 2014 to April 2015. For more details, see http://www.gla.ac.uk/schools/critical/research/fundedresearchprojects/samuels/

Use of Parallel Texts in Cognitive Linguistics Research

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Background

This theme session addresses the usefulness of parallel texts as research material in a wide variety of subfields of cognitive linguistics, which is expected to attract scholars interested not only in cognitive linguistics but also in contrastive linguistics, linguistic typology, corpus linguistics, and translation studies.

Different languages provide their users with different words and constructions for different construals in the same usage event. For research into cross-linguistic universals and similarities on the one hand, and language dependent variation on the other, the use of parallel texts (translations) would seem to constitute an excellent methodological opportunity: while keeping the usage event the same, we can investigate differences in construals. Perhaps surprisingly, however, the systematic use of parallel texts has not received much attention in the field, unlike other empirical approaches such as monolingual corpus research and experimentation. There are some fine exceptions (e.g. Rojo and Ibarretxe-Antuñano 2013; Muskat-Tabakowska 2014; Slobin 1996, 2003; Tabakowska 1993) which show the promise of this approach, but together these do not yet constitute a body of knowledge approaching a coherent insight into what can and cannot be done with parallel texts in cognitive linguistics.

On the other hand, translation corpora have also received increasing interest in neighboring disciplines, such as linguistic typology (Cysouw and Wälchli 2007; Van der Auwera et. al 2005; Verkerk 2014) and corpus linguistics (Barlow 2008; Xiao and Dai 2014). Therefore, there seems to be quite some potential in exploring this methodology that cognitive linguistics can take advantage of, in empirical coverage, in linguistic theorizing and in connecting to other parts of the field.

The questions that we are interested in include at least:

1. Does use of parallel texts enjoy an advantage over other approaches in answering any theoretically relevant questions in CL? What are the strengths and weaknesses of using parallel texts?
2. What kind of insight can parallel texts bring to CL that other types of methodologies cannot?
3. In cases where a functional category (or, to construe it in another way, a functionally relevant family of constructions) is available in all the languages involved but mismatches of distribution among the texts are found, can these be taken as indicative for differences in construal? How can hypotheses in this area be tested?
4. In cases where a functional category is absent in one of the languages involved, do we still find a pattern of correspondence in the texts? How can such patterns be established and validated?
5. How do we account for the level of correspondence in the texts?

Our session shows the diversity of the application of such methodology, in the sense that we have on board papers dealing with a wide span of subfields of cognitive linguistics, including cognitive translation studies, cognitive semantics, constructions, pragmatics and stylistics.

Contributors

Magdaléna Honcová and Wei-lun Lu. Masaryk University. Use of Parallel Texts in the Investigation of Spatial Language: The Case of English and Czech.

Barbara Lewandowska-Tomaszczyk. University of Łódź. Meaning approximation, construal and parallel corpora.

Natalia Levshina. FNRS - Université catholique de Louvain. Probabilistic semantic maps of causation and causality: A study based on a multilingual parallel corpus.

Enrique Gutiérrez Rubio. Palacky University. Phraseological motivation and translation strategies: Translation of Spanish and English conventional figurative units into Czech.

Mingjian Xiang and Esther Pascual. Zhejiang University and University of Groningen. Translating the invisible: Fictive questions in an Old Chinese text and its English translations.

Annemarie Verkerk. University of Reading. A phylogenetic comparative investigation of source-goal asymmetries in Indo-European.

Brian MacWhinney. Carnegie Mellon University. Discussion

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Parallel Texts as a Methodology in Investigation of Language of Space: The Case of English and Czech

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Background

Spatial prepositions constitute a well-investigated area in cognitive linguistics, with already quite a number of studies addressing the conceptual or constructional aspect of their use (Lakoff 1987, Tyler and Evans 2003, among others). However, majority of these studies are based on either construed data or (a comparison of) mono-lingual corpora at the best, even though some positive exceptions do exist (e.g. Muskat Tabakowska 2014).

In view of this gap, we propose to use parallel texts as an alternative methodology of investigating how speakers of different languages verbalize their understanding of space in the *same* usage event. For this purpose, we will employ the first chapter of *Alice in Wonderland* and its four Czech translations as our research material. We will be particularly interested in the English spatial prepositions and their Czech counterparts.

We therefore suggest studying the data of the parallel texts in order to examine what the advantages of using parallel texts over other methodologies are; and what parallel texts can tell us about ways English and Czech speakers verbalize and conceptualize space. The data suggest that different languages use different construals to express the same conceptual scene. This implies an intriguing question: Can the usage of different construals create different understandings of the same spatial scene? Since the data indicate that the answer is positive, we will also examine whether the differences are caused by the idiolect of a translator or by the grammatical systems of the languages.

Investigation of these questions involves consideration of the relationship of *stylistics* and *construal*. This will be approached from the point of view of Cognitive Poetics, as we aim at the study of language of narrative with regard to the aspects of human cognition. Working with multiple translations also requires consideration of the role of translation- and linguistic-relativity. Stylistics along with language variation therefore constitute recurring topics in the course of using parallel texts as a methodology.

One of the most striking finding that the parallel texts uncovered are discrepancies in the distinction of *static* and *dynamic* terms in English and Czech (Strnadová, 2006), i.e. whether the *trajector* in a conceptual scene is stationary or in motion. The data revealed that what is perceived as *dynamic* in English is, in some cases, expressed by *static* preposition in Czech. Moreover, we observe that a spatial relationship may be realized by constructions at the morphological level (inflections in particular), which serves the semantic function of a preposition. English, on the other hand, does not take advantage of similar constructional means for verbalizing a spatial relationship.

In this respect, we suggest that our data point to a radically conventional nature of grammar (Croft, 2001), i.e. that the large part of the construals is arbitrary. We also believe that a systematic employment of parallel texts in the future research will prove fruitful in tracing discrepancies and inconsistency across languages through literary master-pieces.

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Meaning approximation, cluster equivalence and parallel corpora

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Background

The assumption of the thesis presented is that the product of translation (TL) is not fully equivalent to the source text (SL) and instead, as put forward in Lewandowska-Tomaszczyk (2010), it comes into being through a number of cycles of *re-conceptualization* of the SL message. The translator's *construal* of an original scene (Langacker 1987), structured by language convention, cultures and contexts, individual dispositions and preferences, contribute to a modified SL-scenario construal. Additionally, any (putatively synonymous) *linguistic form* in TL, which the translator considers a possible TL equivalent, brings about *a new re-conceptualization cycle*, which results in an ultimate SL – TL texts *asymmetry*. Each translational selection implies distinct *construal potential*, responsible for particular *imagery effects*.

The main aim of the paper is to provide *corpus-based evidence* that the resemblance between the SL version and its corresponding TL version is not captured by meaning *identity* but by *semantic approximation* in terms of *cluster*-for-*cluster* equivalence. Moreover, data is presented to support the claim that a translated text involves coarser meaning granularity and higher schematicity, when juxtaposed to the original. This is exemplified by the analysis of the concordance materials referring to *Emotion Events* in English and Polish, collocational profiles of relevant items and confronted with the results of the construal qualitative analysis and questionnaire-based methodology. Data from monolingual corpora (BNC and National Corpus of Polish) and relevant parallel corpora are used with the corpus tools involving collocation generator (pelcra.pl/hask_pl) and aligned concordancer (http://clarin.pelcra.pl/Paralela/# Pęzik 2014).

Some of the emotions referred to are FEAR, LOVE, and DISGUST clusters. Semantic differences and varying construal potential are exemplified by differences between e.g., *he felt a nausea and distaste of life* or *she just despises the ocean* as SL versions of Pol. *mieć wstręt do* lit. 'to have repulsion to'. The collocation distribution is informative with reference to steady *phraseological units*, e.g., *light disgust* 'lekkie obrzydzenie' (14 occurrences) vs. not reported *light repulsion* 'lekki wstręt', juxtaposed to the combination *deep repulsion* 'głęboki wstręt' (6 occurrences). The distribution informs about the higher emotion arousal in the case of *repulsion* vs. *disgust*, and shows partial correspondence only to Pol. *wstręt – obrzydzenie* distinction. Other collocational combinations present relevant phraseological preferences e.g.: *disgusting display* (4) and *repulsive force* (14) versus non-reported *disgusting force* and *repulsive display.* Distinct types of cross-linguistic asymmetries are identified for FEAR and LOVE clusters.

The parallel corpora clearly indicate two processes in translation: *a cluster-for-cluster mapping* and a *higher schematization* of the target as contrasted with the source version, accompanied by the *concept POS re-categorization* (e.g. Eng. *disgust, aversion, nausea, distaste, horror, despise, to loathe, to shrink (from something), dirt, reluctance*, translated as Pol. *wstręt* 'repulsion'*, brzydzić się* 'to loathe'). The cluster structure proposed is confirmed by the results of a questionnaire-based method applied in Lewandowska-Tomaszczyk and Wilson (2013), and reveals high interconnectivity links between emotion terms within the same cluster as well as metacategorial grouping of emotion terms (e.g. *disgust*, *hate*, *anger*, *fear*).

The paper concludes with the identification of some weaknesses inherent in parallel corpus materials (e.g. scarcity of spontaneous conversational data and informal contexts, contextual limitations of available aligners).

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Probabilistic semantic maps of causation and causality: A study based on a multilingual parallel corpus

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This study is a quantitative investigation of cross-linguistic variation in conceptualization of causation and causality. Causation is typically expressed by verbal constructions, most importantly, by lexical, morphological and analytic causatives, e.g. *The sheriff killed Bill*, *The sheriff entombed Bill* or *The sheriff caused Bill to die*, whereas causality is a relationship between two propositions, typically expressed by causal connectives, such as *because* or *therefore* (cf. Stukker 2005). The main aim of the study is to pin down the differences and similarities in the main dimensions of semantic variation of causation in a sample of 15 typologically diverse languages.

Following the method described in Wälchli & Cysouw (2012), this study demonstrates how one can use a multilingual parallel corpus to create probabilistic exemplar-based semantic maps of causation and causality. Even though there has been polemics about the cognitive status of semantic maps (cf. Cristofaro 2010 vs. Croft 2010), such maps serve as a convenient tool for identification of the most salient semantic extensions and formulation of probabilistic implicational hierarchies in functionally oriented typology. Using parallel corpora represents a viable alternative to experimental approaches in empirical semantic typology (e.g. Majid et al. 2008), especially in abstract domains, such as causation and causality.

The data for our study come from a multilingual parallel corpus of fiction and film subtitles compiled specially for this project. We use two data sets. The first one, designed for exploration of causation, includes instances of lexical, morphological and analytic causatives and their translations in the sample of languages. The second data set, which is used for investigation of causality, contains instances of complex clauses with various causal connectives. We employ Multidimensional Scaling, interactive plots and other visualization techniques to explore the structure of the probabilistic semantic maps and cross-linguistic differences in the form-meaning mapping. The results are interpreted from the perspective of the theory of Force Dynamics (Talmy 2000) and the theory of Mental Spaces (Fauconnier 1985; Sanders & Sweetser 2009).

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Phraseological motivation and translation strategies: Translation of Spanish and English conventional figurative units into Czech

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Background

The research presented in this paper is based on the cognitive-oriented theories about figurative language (Dobrovol'skij and Piirainen 2005; 2009; Dobrovol'skij and Baranov 2009) and translation (Samaniego Fernández 1996; 2013; Rojo and Ibarretxe-Antuñano 2013).

The aim of the paper is to relate the sort of phraseological motivation in the source text to the decisions taken by the translator for the goal text. For this purpose hundreds of commonly used English and Spanish conventional figurative units (CFUs) and their Czech translations were systematically analysed.

Data was extracted from the parallel corpus Intercorp (http://ucnk.ff.cuni.cz/intercorp/).

Since in most of the idioms several motivations are combined (see Mellado 2013: 62), the typology of motivations proposed by Dobrovol'skij and Piirainen (2009) was simplified into four main groups:

a) *conceptual* metaphors, i.e. motivation based on human experience;

b) *general* symbol and frame-based metaphors, i.e. cultural elements shared by Western society;

c) *specific* symbol and frame-based metaphors, i.e. English/Spanish cultural elements;

d) opaque motivation.

Up to 13 translation strategies based on the literature on the topic (Vilikovský 1984; Newmark 1987; Rabadán 1991; Vinay and Darbelnet 1995; Lopéz Guix and Wilkinson 1997; Hurtado Albir 2001) are proposed: identical CFUs, equivalent CFUs, apparent CFUs, phraseological loans, paraphrasing, compensation, omission, etc.

Next, some preliminary conclusions are proposed:

a) regarding the translation strategies used by Czech translators, there are no significant divergences between CFUs with types a) and b) of motivation;

b) when the translations of CFUs with *specific* symbol and frame-based metaphorical motivation are confronted, the majority of them are translated by paraphrasing, which would probe the complexity of translating this sort of CFU;

c) opaque CFUs tend to be language-specific.

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Translating the invisible: Fictive questions in an Old Chinese text and its English translations

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Background

We analyze non-information-seeking questions in *Zhuangzi* (4th c. B.C.), a classical Chinese text on Taoism, and its different translations into English. These questions are: rhetorical questions ("Why bother?"), expository questions ("Why do I say this? Because…"), and attention-getting questions ("Ever heard of that?"). Despite their interrogative forms, these questions are fictive, since their corresponding answers are either presupposed or provided in the immediate discourse. Critically, they are highly successful discourse strategies and thus important for structuring the text and/or presenting its argument (Pascual 2002, 2006). An accurate translation of such questions is thus non-trivial.

In this paper, we examine how fictive questions have been translated from classical Chinese to modern English in three different translations of the entire *Zhuangzi* text (Watson [1968] 2013; Mair 1994; Wang 1999). Since classical Chinese is grammatically underspecified (Bisang 2008) and hence highly context-dependent, there often are no distinctive markers for fictive vs. factive questions. Also, certain pragmatic markers, such as the first and second person pronoun, may be absent in some instances. These often occur in attention-getting questions, as they presuppose a mixed viewpoint between Addresser and Addressee. More importantly, the original text is unpunctuated, another big challenge for translators when trying to identify illocutionary force.

This paper explores how the underspecificity of the original old Chinese text becomes overtly specified in the modern English version(s) and which of the three translations is most functionally equivalent to the original in terms of the rendition of fictive questions.

A phylogenetic comparative investigation of source-goal asymmetries in Indo-European

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Background

A well-known cross-linguistic similarity of motion event encoding systems is attention to goals rather than sources of motion. This was first described by Ikegami (1987) as a general, non-motion specific feature of case markers. Regier and Zheng (2007) show that speakers of Mandarin Chinese, Lebanese Arabic, and English describe motion event endpoints in finer semantic details compared to motion event beginnings. Kabata (2013) finds that ablative (source) case markers have undergone wider patterns of semantic extension compared to allative (goal) case markers in a comparison of 24 languages. The importance of goals over sources in spatial language has thus been established for different types of speakers, using both experimental methods (Lakusta and Landau 2005) as well as large corpora (Stefanowitch and Rohde 2004). Goals of motion are found to be expressed more frequently and with a more extensive range of adpositions, adverbials, and cases. However, any potentially interesting diachronic patterns relating to the cross-linguistic attention to goals over sources have so far not been uncovered.

The main objective of this study is to report on an investigation of source-goal asymmetries in the Indo-European language family. The data have been collected from a parallel corpus of translations of *Harry Potter and the Philosopher's Stone* by J. K. Rowling into 25 Indo-European languages. The main question that is addressed in this paper is whether having a source-goal asymmetry is diachronically stable, i.e. whether languages consistently maintain this asymmetry over time or whether it was lost and gained several times along the branches of the Indo-European phylogenetic tree. This study was conducted by first collecting all clauses that express voluntary motion of humans to a different location in the original English book. These motion clauses where then coded for the presence of source and goal information. It was then calculated how often the expression of sources and goals was retained, lost or added in the translations. Phylogenetic comparative methods were subsequently used to asses the diachronic stability of the source-goal asymmetry in Indo-European. Specifically, ancestral state analyses were conducted to test whether the ancestors of the Indo-European languages display similar source-goal asymmetries as were found for the contemporary languages (see for an example of ancestral state reconstruction analysis Jordan et al. 2009).

The first results of this study suggest that the source-goal asymmetry in Indo-European is stable. Overall, the languages in the sample are more likely to retain goal information, and this behaviour can be reconstructed with confidence for the ancestral nodes of the Indo-European tree. This finding sheds further light on the cognitive underpinnings of source-goal asymmetries, giving further support for the saliency of endpoints in cognition and language (Regier and Zheng 2007). In addition, the paper addresses methodological questions regarding the usability and limitations of using a parallel corpus, as well as the use of phylogenetic comparative methods for the diachronic study of linguistic diversity.

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Viewpoint in and across multimodal artifacts

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Background

This session reflects current trends in cognitive linguistics and beyond, centering on viewpoint and multimodality. Viewpoint was once mainly studied in (typically narrative) discourse from the sentence level up, but recent studies (e.g. Dancygier & Sweetser 2012) have refocused interest both to lower-level constructions marking viewpoint (such as determiners, genitives, polarity and negation markers), and outward, beyond the purely textual, to gesture, sign language, visual artifacts, and various multimodal combinations (e.g. in advertising or comics). This meshes well with the increasingly general recognition that language as a whole is best understood in terms of the interaction between verbal and embodied (kinesic and visual) modalities, and has led to recent work establishing clearly that multimodality in viewpoint is the norm rather than the exception (e.g. Parrill 2012, Green 2014).

Given the recent emergence of numerous forms of communication relying on multiple channels of expression, a theoretical engagement with these issues and the construction of analytical tools is more needed than ever. With this in mind, this session investigates how various expressive modalities complement each other in communication, how they negotiate the varieties of viewpoint (spatial, embodied, gestural, visual, etc.), and what this tells us about viewpoint as a cognitive phenomenon.

The session starts with two papers rethinking some of the theoretical foundations of viewpoint research: Dancygier & Vandelanotte discuss the role of image schematic scaffolding and linguistic frames in the emergence of complex multimodal artifacts (in street art, various text genres, and film), and Feyaerts et al. use a multimodal corpus of face-to-face interaction to enhance our understanding of how conversationalists align their behaviour depending on contextual and social factors. The next set of papers consider whether and how viewpoint phenomena traditionally studied in narratology, such as free indirect discourse, focalization, empathy, dramatic irony, and others, apply beyond purely textual modes. Two of these papers focus on comics, with Borkent looking at how (multi)modal features in comics contribute to various types of multi-viewpoint blends, and Forceville studying the interaction between visual and verbal resources in construing 'metarepresentations' (i.e. representations of what others say, think, perceive, feel, etc.); Sweetser shows how ads subtly prompt us to empathize with a viewpoint through the visual more than the verbal stream; and Tobin studies differences in how story twists (requiring reanalysis of viewpoint) work in prose vs. film, in which the visual and auditory streams come into play. The next two papers analyse aspects of embodiment and viewpoint blending in political settings: Lou analyses the frames and metaphors involved in Hong Kong's "Umbrella Revolution", with the umbrella itself seen as a blend of a shield and a gun, open to ideological use and challenge, and Guilbeault studies gestures that accompany antithesis in political discourse, where the material setting of two podiums equidistant from the centre further enhances the oppositions. This gestural focus is continued in two papers using more experimental data: Rekittke analyses observer vs. character viewpoint in relation to stance in re-enactments of film prompts about a taboo topic, and Mittelberg studies simulated artifact immersion as a viewpoint strategy used in descriptions of different static visuo-spatial prompts (painted scenes and architectural models). The final two papers study different aspects of recent technological innovations in communication modes: Hayler studies the e-reader as multi-modal artifact, showing how the different experience of amateurs and experts produces differently encounterable objects – with different real effects in the world – from the same artefact, and the closing paper by Vandelanotte & Dancygier studies how the textual and visual patterns used in internet memes such as *binders of women* or *said no one ever* are reused and modified across a range of contexts, always driven by new viewpoints, with the ultimate viewpoint usually unstated but emerging from a hierarchical network of evoked viewpoints.

The shared concern of these contributions is to tease out and formulate viewpoint mechanisms across different modalities (verbal, visual, gestural, postural, etc.), be they shared, synchronized, or in some sense modality-specific. These questions are considered across a broad range of data and methodologies, involving existing multimodal artifacts as well as corpus data and experimental 'enactment' tasks. Jointly, the papers afford a better understanding of the interaction between language, embodied communication, material objects and visual artifacts, clarifying the role of viewpoint in the emergence of multimodal forms and allowing a more textured definition of the phenomena involved.

Contributors

Barbara Dancygier and Lieven Vandelanotte. University of British Columbia / University of Namur & University of Leuven. Image-schematic scaffolding in visual and textual artifacts

Kurt Feyaerts, Bert Oben, Ilona Papousek and Helmut Lackner. University of Leuven / University of Leuven / Karl Franzens Universität Graz / Medizinische Universität Graz. Alignment and viewpoint

Mike Borkent. University of British Columbia. Multimodality and multi-viewpoint construction in comics
Charles Forceville. University of Amsterdam. Representation and metarepresentation of thoughts and speech in the medium of comics
Eve Sweetser. University of California, Berkeley. Metaphor and iconicity in advertising: Dividing modalities and conquering the audience?
Vera Tobin. Case Western Reserve University. Viewpoint and sound design in film: Misdirection and re-construal in *The Conversation*
Adrian Lou. University of British Columbia. Viewpoint blending in Hong Kong's Umbrella Revolution
Douglas Guilbeault. University of British Columbia. Opposition and viewpoint in political debate
Linn-Marlen Rekittke. RWTH Aachen University. Viewpoint and stance in gesture: How tabooed discourse content influences speakers' gestural viewpoint in film retellings
Irene Mittelberg. RWTH Aachen University. Experiencing artworks from within: Simulated artifact immersion as viewpoint strategy in transmodal enactments of paintings and architectural sketches
Matt Hayler. University of Birmingham. The same, but different: An ontology of expert and amateur interactions with technology
Lieven Vandelanotte and Barbara Dancygier. University of Namur & University of Leuven / University of British Columbia. Multimodal interaction and viewpoint in internet memes

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Image-schematic scaffolding in visual and textual artifacts

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Background

Comparing textual and visual means of expression is often difficult because of the different natural affordances of each medium. However, it seems inherently possible and productive to attempt such comparisons, as they provide more reliable information on the underlying conceptual patterns and the nature of frames evoked. In this paper, we consider one type of image schema (Johnson 1987, Lakoff and Johnson 1999) – a barrier – to uncover its viewpoint potential and the ability to yield richer visual, linguistic or multimodal meaning. We show how such an approach uncovers shared conceptual underpinnings of various forms of expression. We propose the concept of '*image-schematic scaffolding*' as a general strategy: very simple image schemas provide skeletal structure which language users fill in, through frames, metaphors and blends, to yield various creative artifacts across different modalities. Crucially, it is the inherent *viewpoint* potential of image schemas that allows complex creative edifices to be built on the basic scaffolding they provide.

A barrier can schematically be understood as a line separating two regions in space. There are then several ways in which the frame enrichment of the schema yields different viewpointed construals: one can imagine observing the divided regions from 'God's eye view' (cf. Bergen 2012), or align oneself with one side of the barrier. The latter viewpoint implies potential experiences of attempts to cross the barrier or remove it, in order to reach or at least see the other side. This 'cross or remove' construal builds on the primary scene, and thus reaches back to early childhood experiences (cf. Grady 1997, Johnson 1997).

The object that is possibly the most common representation of a barrier is a wall. We will look at various representation of walls and barriers, in texts and in visual forms. We will start with street art examples by Banksy, where images on the Israel/Palestinian territories wall create an illusion of removal of the barrier it constitutes, inviting the viewers to participate in the reconstrual of the wall as 'pliable' or 'crossable'. We will also look at political speeches (especially concerning the Berlin Wall and its removal), examples from poetry (by Robert Frost, where the need to remove barriers is the focus) and a novel (*How to be both* by Ali Smith, where the very nature of the hidden structure of the wall is used as a metaphor for layers of narrative meaning). Finally, we will look at the use of the barrier schema in cinematography of the movie *Babel*, where the concept of a boundary brings together various narrative strands of the movie.

These artifacts jointly reveal the meaning-construction potential of a simple underlying schema. The richness of available meanings – social, cultural, political, and moral – relies in a very basic way on the viewpoint potential of the barrier schema. Importantly, the viewpointed nature of a barrier is what gives the artifacts their meaning. For example, graffiti art uses walls as public surfaces. In contrast, when Banksy paints a window on a wall, he foregrounds the wall as a barrier (rather than a surface) and visually prompts the possibility of the barrier being permeated. Much of the importance of walls refers to embodied concepts such as permeability, mobility, vision, or control (all of which are diminished by barriers). When image schemas interact with these concepts, they provide the conceptual scaffolding various modalities build on to achieve similar meaning-construction goals.

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Alignment and Viewpoint

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Background

People in face-to-face interaction align their behaviour. Both in speech and in non-verbal behaviour interlocutors copy each other. This has already been demonstrated for a wide variety of multimodal levels including speech, gaze, gesture, posture and facial features. (a.o. Bergmann & Kopp 2012; Louwerse et al. 2012). Most studies on alignment measure repetition of formal linguistic (verbal or not) features. To date, not much attention has been paid to alignment at the *pragmatic* level. In this study we demonstrate how interlocutors align in performing viewpoint shifts, and how this type of pragmatic alignment is related to other types of linguistic or physical alignment

Experimental research in social neuroscience, has provided evidence that phenomena such as alignment, but also empathy or emotional contagion are affected by a wide range of factors: contextual appraisal, the interpersonal relationship between empathizer and other, or the perspective adopted during observation of the other (Decety & Lamm 2006; Langford et al. 2006; Hein & Singer 2008). Gonzalez-Linecres et al. (2013) describe the awareness of a distinction between the experiences and the viewpoint of the self and others as a crucial aspect of empathy, the level of which appears to be modulated by the *contextual factors* familiarity, relatedness, cooperation and shared social goals (similarity).

What the studies above show, is that alignment is not a mere matter of *mechanistic* priming. As indicated by Oben & Brône (2014) “different factors predict different types of alignment”. Alignment not only occurs automatically, but also contextual and situational factors determine whether or not interlocutors will align. In the present study we zoom in on the following factors: familiarity and similarity among speakers, speaker dominance and conversation duration. We will do this using a corpus of 35 dyads, each engaged in 22 minutes of spontaneous face-to-face conversation, in which speakers were complete strangers to each other prior to the experiment. The corpus is fully transcribed, tagged for parts of speech and has an interdisciplinary design: it is annotated for verbal, gestural, physiological (heart rate, respiration) and psychological, empathy-related parameters.

On the basis of this particular multimodal corpus we seek converging empirical evidence in linguistics, physiology and psychology for an analysis of alignment as a *process*, in which progressively – as conversation but also the social relationship between the interlocutors unfolds –, more and more contextual factors get entangled in what at first sight may appear to be just a repetition of formal segments on different levels of semiotic expression. As interlocutors, strangers at first, get to know each other better, thus increasing their familiarity and possibly also their cooperation in function of a shared social or communicative goal, they align more. Also, we observe an increasing variety of levels and contents in which alignment is involved. Alignment is not only dynamic quantitatively (more alignment) but also qualitatively (different levels). To be more precise, alignment of viewpoint shift is dependent on the duration of the interaction (more alignment towards the end), but also on social factors (dominant speakers align less; interlocutors that like each other align more). These findings seem to favour a non-mechanistic take on the phenomenon of alignment, with viewpoint as a gateway into the complexity of how alignment operates at different levels, including the pragmatic level.

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Multimodality and Multi-viewpoint Construction in Comics

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Background

As the chapters presented in Dancygier and Sweeter (2012) show, viewpoint is a crucial component of the discussion of embodied meaning across a range of expressive modalities in natural and mediated forms of communication. My presentation will discuss several types of viewpoint construction in the popular medium of comics, which includes graphic novels and comic strips. Comics often present multiple viewpoints simultaneously and multimodally, both within individual panels or in sequences, in a way presenting a mediated and artificial version of some viewpoint constructions found in gesture (Sweetser 2013). I will focus on how the strategic use of modal and multimodal features in comics contribute to specific construals of multiple viewpoints and inform interpretations of characters and events.

To develop my analysis, I will employ the blending framework (Fauconnier and Turner 2002) in conjunction with mental simulation theory (Bergen 2012) to describe how readers simulate modal prompts to develop viewpointed construals of characters and scenes. This method allows for a careful analysis of how viewpoints are established, aligned, complicated, and augmented within single panels and in sequence. My will analyze several different viewpoint constructions to illustrate the complexity of viewpoint cues in these multimodal artifacts. I will outline the basic contributing modal and multimodal features of multi-viewpoint construction in comics, focusing on pictographic conventions, verbal dialogue, and narratorial prompts.

I will analyze an example comic-strip by Johnston (2010) to show how she multimodally develops contrasting viewpoints to construct dramatic irony and viewpoint transformation. I will go on to show how character-specific viewpoints can be externalized and projected into the environment to produce a variety of multi-viewpoint blends that develop elaborate interpretations in the graphic novels and collections by Lemire (2012), Will (2013), and Doucet (1995). These examples will include blends of bird's eye viewpoints with inner monologues, viewpoint elaboration through personification of inanimate environmental features, and visual projection of subjective perceptions onto whole scenes, in which one viewpoint filters and re-construes interpretations of other viewpoints. Many of these multi-viewpoint blends are prompted by instantiations of visual and multimodal metaphors (Forceville 2008) as well as other perceptual cues that facilitate viewpoint construction and characterization. The proposed analyses of multi-viewpoint blends show how meaning is construed through various dimensions of viewpoint interactions, driven both by formal means and linguistic choices. The specific medium of comics informs our understanding of language, as we observe it in ongoing interaction with the attendant visual forms. Importantly, the examples show that viewpoint is a central contributor to the construction of meaning, regardless of the communicative modality or modalities involved.

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Representation and metarepresentation of speech, thought, and perspective in the medium of comics

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Background

Comics draw on the visual and the verbal modality, making it a thoroughly multimodal medium. A central strand of comics research is partly or wholly inspired by cognitive linguistics and relevance theory (e.g. Forceville 2005, 2011, 2014, Forceville and Clark 2014, Yus 2008, Kukkonen 2013, Cohn 2013, Cohn in prep.). As in monomodal written and spoken language, the representation of speech and thoughts in comics is a central issue. Consider the following utterances:

(1) Lisa: The apple tree is to the right of the barn.
(2) Lisa: John says the apple tree is to the right of the barn.
(3) Lisa: John thinks the apple tree is to the right of the barn.

Relevance theory states that utterances such as (2) and (3) show the speaker's "'metarepresentational' ability, i.e. the ability to represent the representations of others" (Clark 2013: 345). Here is another type of metarepresentation:

(4) Lisa: John sees/hears/smells/feels that the apple tree is to the right of the barn.

While the addressee of (1) knows that the speaker, Lisa, herself is committed to the judgment that the apple tree is to the right of the barn, in (2-4) the speaker reports someone else's (i.e. John's) judgment. In (2-4), the responsibility for stating the correct location of the apple tree increasingly involves Lisa's interpretation of John's perspective on its location – and this interpretation may be wrong, or biased.

In comics this issue is further complicated because salient information about "saying/thinking/ perceiving that …" can be conveyed verbally, visually, or in their combination. At the highest level, the comics reader will of course postulate an agency that is responsible (as "Lisa" is in [1]) for the information conveyed in the two modes – namely that of the creator of the comics. That is, there is a narrating agency that 'says' verbally and visually: "the apple tree is to the right of the barn." But this narrating agency may metarepresent this information via a character, and this may involve further levels of embedding representation.

In this paper I will analyse panels from various comics sources to inventory which visual resources play a role in metarepresentations, and the degree to which these depend on interaction with the verbal mode. These resources include point-of-view shots and body postures as well as non-verbal information in characters' text balloons. The findings will show that, and how, there are multimodal and purely visual equivalents for "thinking/perceiving that …" and even for "*saying* that …"

The broader interest of the paper is that considering "metarepresentations" in visual and multimodal modes helps expand our understanding of phenomena that have traditionally been seen as belonging exclusively to the domain of the verbal. Adopting cognitive linguistic and relevance-theoretical approaches for the study of comics shows how these models contribute to our understanding of visual and multimodal discourses. This will benefit both the theorization of such discourses and help develop these hitherto mainly language-oriented models.

Metaphor and iconicity in advertising viewpoint: Dividing modalities and conquering the audience?

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Background

It is recognized (e.g. Fauconnier and Turner 2001, Forceville 1994) that advertising involves creative combinations of visual and linguistic modalities. This paper analyzes some "division of labor" between modalities in building iconic and metaphoric advertising blends, in a corpus largely taken from on-line access to American print and television ads. What gets put into language, and what gets put into pictures? And how are ads special? Advertisers quite frequently prefer source-domain visuals combined with target-domain language, simply because pictures are not legally subject to the same constraints on truth or responsibility as language. A video ad for Sharron Engle's U.S. Senate campaign in Nevada uses relatively neutral language (no
racial slurs) to advocate limiting illegal immigration; the accompanying video track shows apparently Hispanic men, carrying machine guns and walking through broken cement walls. The source-domain inferences are vividly present, but the metaphor (possibly OUR COUNTRY IS A HOME, ILLEGAL IMMIGRANTS ARE VIOLENT HOME-INVADERS?) is never put into words,
nor is it anywhere stated even that the depicted men are criminal, much less that they are to be taken as categorially metonymic for Hispanic immigrants in general. So Engle could not be charged with making quite such an emotional claim.

Often more effective, however, is fuller integration of visual and textual blends, with both domains present in both modalities. In a successful Apple television ad sequence, a cool young black-t-shirted guy says, "I'm a Mac," and a dorky non-cool guy in a sports jacket says, "I'm a PC." Metonymically, the two characters evoke stereotypical frames of both the relevant corporate employees and the relevant customers. Metaphorically, as stated, they are the computers; the PC guy, for example, stops talking at one point and the Mac guy helpfully calls on IT to "reboot" him. (Note, however, that despite the linguistic overtness of the mappings, Mac ads would not want to say in words that PCs in general are unreliable; this metonymy is very strongly implicated, but unstated for good reason.) Such relatively balanced blends are not specific to advertising at all:
political cartoons frequently show a visual blend of source and target domains, with linguistic labels.

Crucially, in both of these situations, the video track is strongly viewpointed, in a way that the linguistic track can avoid. Engle's prose is pretending to be a "balanced" viewpoint on immigration; the Mac ad starts with the two characters saying in language that they are friends and can work together (e.g., within the metaphor, they can both use Microsoft programs). But viewers can see from the start that the machine-gun-toting characters are scary to them, just as they know that the "Mac guy" is cool, while the "PC guy" is dorky and nervous. Advertisers strongly intend to advocate a particular viewpoint, but of course they don't want viewers to be too aware of their advocacy; hence overtly stated linguistic viewpoint is not ideal, while more implicit visually presented viewpoint is more effective.

Viewpoint and Sound Design in Film: Misdirection and Re-Construal in *The Conversation*

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Background

This paper takes up a particularly narrative viewpoint phenomenon: the case of story twists that hinge on the re-analysis of what, or whose, viewpoint should be associated with a given element in the narrative. Stories can and very often do build surprises by encouraging audiences to attribute certain assertions, presuppositions, and evaluations to an "objective" or base-level perspective, only to reveal later on that these elements should be attributed only to the mistaken or deceptive viewpoint of a particular character. This happens commonly in written narratives, but also in drama and film. Film is quite different from purely linguistic narratives in terms of when and how it is obligatory to associate a given element explicitly with a single coherent viewpoint, and in how it shifts between character and observer viewpoints. The orientation and movements of the camera's "gaze," dialogic speech, voice-over speech, non-verbal auditory elements, and the timing of edits can all be more or less overtly associated with the viewpoint of a particular individual, and their viewpoints can track together or separately.

Francis Ford Coppola's film *The Conversation* (1974) famously capitalizes on these complexities to create its climactic surprise. The film centers on a surveillance expert, Harry Caul, who is working on a particularly difficult piece of audio reconstruction. For the first third of the film, the crucial snippet is indecipherable. We see and hear the process of juxtaposing and combining the information from different tapes, until words emerge from the muddle. Later, in the film's final moments, Harry realizes that his interpretation was wrong, and we hear (as he does) a new version of the recording. As the film's sound designer, Walter Murch, said in an interview (Ondaatje & Murch 2002), the audience suddenly learns that the film has been "wholly and singularly made from Harry's point-of-view," when "most unexpectedly, we discover that Harry has—all along—mentally altered the cadence of the line."

The degree to which viewers judge this twist to be fair play or a cheat varies considerably; I will discuss why and how this is the case, and how it relates to similar viewpoint construals in prose. This paper will look at how viewpoint blends, shifts, and distinctions between the "viewpointed" and "non-viewpointed" (cf. Dancygier & Sweetser 2012) status of elements in the visual and auditory stream in film can work together to create this effect, and how these are and are not analogous to similar effects of unreliable narration, focalization, and free indirect discourse in prose. I will compare three increasingly multimodal and indirect examples of this maneuver, moving from represented viewpoints in a purely linguistic mode to their analogues in film:

(1) How misleading evaluations and attributions can be embedded in a first-person narrative, through both presuppositions and entailments: an example from Elizabeth George's *A Great Deliverance*;

(2) Similar effects achieved through free indirect discourse: an example from John Le Carré's *The Spy Who Came in From the Cold*; and

(3) The case of *The Conversation*.

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Viewpoint Blending in Hong Kong's Umbrella Revolution

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Background

Unlike Occupy Wall Street and other recent demonstrations, the ongoing suffrage protests in Hong Kong have been defined by one symbolic object: the umbrella. "The Umbrella Revolution" received its name after images of protesters using umbrellas to shield themselves from police tear gas and pepper spray proliferated online. This paper assesses the multimodal depictions of the umbrella (the textual and visual artifacts disseminated online). I examine how these multimodal entities are informed by a set of conceptually blended viewpoints, which incrementally modify the ways in which the material object of the umbrella can be used, both physically and ideologically, as a symbol of resistance.

First, I argue that the media's textual and visual evocation of the Tiananmen Square Massacre and the iconic photo of the "Tank Man" provide foundational frames to construe the images of the Hong Kong protests. Both "The Tank Man" and the photos of the Umbrella Revolution highlight a common image schema of blockage (an average citizen standing against a conspicuously stronger militarized force). However, the parallels are also solidified by the media's labeling of one protester as the "Umbrella Man" which works to multimodally establish, and perhaps limit, the viewpoints available to interpret the images of the events. Much artwork created since has integrated Tiananmen Square imagery.

Second, I view the umbrella as a conceptual blend (Fauconnier and Turner 2002) of a shield and a gun, with which it shares many physical and functional qualities. This visual blend gives the umbrella new affordances, enabling it to be construed as a symbol of defiance or victory when held up high, and as a harmless, makeshift and precarious shield when positioned in front of the body. The fact that the umbrella is, of course, not a gun makes these bold gestures peaceful ones.

Third, I unpack the multiplicity of viewpoints (Dancygier and Sweetser 2012) embedded in the visual representations of the umbrella by targeting specifically their frames and metaphors. For instance, the umbrella embodies the unity of people (protesters) under one shared environment (ideological belief). Moreover, the umbrella is a viewpointed object that places the umbrella user in an unwelcoming outside space (the public demonstration). The lack of movement exhibited by an umbrella user (the occupation of streets with umbrellas), furthermore, suggests the user is persevering through harsh conditions (lack of suffrage and democracy) and waiting for the cessation of such conditions (the implementation of suffrage and the resignation of Hong Kong's Chief Executive).

Lastly, I explore the ways in which viewpoint blending is used politically to rhetorically control the discursive message of the protests. I analyze the Hong Kong government's attempt to challenge the umbrella by inserting new construals of viewpoints (umbrella as a dangerous weapon) to subvert the momentum of the movement. Ultimately, the Umbrella Revolution, I contend, is an illustrative case that demonstrates how, in the age of new media technology, frames and viewpoints of material objects are not only being constantly created but also manipulated and re-appropriated to drive or challenge social movements.

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Opposition and Viewpoint in Political Discourse

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Background

Politicians are under immense pressure to defend their viewpoint, over and against the viewpoints of their opponents. Out of these pragmatic conditions emerge a unique set of multimodal techniques for opposing multiple viewpoints. While verbally expressing multiple viewpoints, both their own and others, politicians will simultaneously express multiple viewpoints in the gestural stream. Expressive choices in each modality combine to frame each viewpoint with respect to each other, forming a dynamic, crossmodal system. To outline the rhetorical affordances available to this system, I examine the multimodal delivery of *antithesis*, a rhetorical figure wherein contrastive terms are placed in close proximity, within roughly parallel syntax (Fahnestock 1999).

Consider the following antithesis from Obama's *A More Perfect Union* speech: "Conservative commentators built entire careers unmasking bogus claims of racism while dismissing legitimate discussions as mere political correctness or reverse racism" (2008, 23:36). Here *unmasking bogus* is antithetically opposed to *dismissing legitimate*. At the verbal level, we observe multiple viewpoints: Obama reflects an evaluative stance in his lexical choice of *bogus* and *legitimate*, while also referring to his opponents' lexical choice of *political correctness* and *reverse racism*. At the gestural level, however, we observe several techniques for characterizing these viewpoints. For instance, Obama uses his gestures to pair *bogus* and *legitimate* with polar regions of space – bogus with right, legitimate with left. Then, when delivering the words of his opponents, he returns to his right hand in the right space. Doing so allows him to link his opponents' words to the same space as *bogus,* consequently casting a negative valence upon them that stems from his viewpoint. This is one of many rhetorical strategies that rely upon elaborate crossmodal coordination.

Opposition is one of the most fundamental relationships in human thought, and several linguistis have grounded its structure in the body (Turner 1991; Jeffries 2010; Israel 2011). I incorporate gesture into these models to expose how viewpoint intermingles with opposition during communication. In recent years, a dynamic model of metaphorical gestures has begun to account for how gesture modifies the use of embodied structures in abstract thought (Müller 2008). In this paper, I discuss how gestures modify embodied oppositions to channel how they map onto abstract oppositions, *in accord with the speaker's viewpoint*. That is, I argue that viewpoint operates as a dynamic constraint on the online crossmodal construction of oppositional meaning. Specifically, I discuss a range of gestural parameters that allow Obama to characterize his antithesis in terms of his viewpoint – for example, by pairing positive words with one hand and negative words with the other, he reflects an emotional alignment (Casasanto 2010); and by varying the distance between the hands, he stresses a particular degree of contrast (Sweetser 1998; Casasanto 2008). These parameters and several others illuminate core dimensions of opposition and its cognitive instantiation, while also shedding light on why it has served, throughout history, as a persuasive technique.

Altogether, my paper shows (1) how embodied oppositions are dynamically interpreted in the context of viewpoint, (2) how multiple viewpoints are interrelated in crossmodal settings, and (3) how modalities interact to construct viewpoint in a rhetorical manner.

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Viewpoint and stance in gesture: How tabooed discourse content influences speakers' gestural viewpoint in film retellings

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Background

This research investigates how a speaker's stance towards a tabooed topic may affect her gestural viewpoint strategies in multimodal discourse. A Ugandan short film revolving around the topic of adultery here serves as the stimulus of a narration task in which bilingual subjects retell the film in the two languages they speak natively. In the analysis of the retellings, special attention was paid to: a) how the speaker's attitude towards critical contents is expressed through communicative action (Kendon 2004, Debras 2013); and b) how gestural viewpoint and the use of gesture space provide insights into the construal of these contents for communication (McNeill 1992; Dancygier & Sweetser 2012; Stec 2013).

Besides linguistic markers of viewpoint, co-speech gestures may also function as indices of conceptual viewpoint (Parrill 2012; Sweetser 2012). When employing observer viewpoint (OVPT), the speaker may gesturally profile schematic, spatial information of a given scene or relations holding between elements. By contrast, when employing character viewpoint (CVPT) the character's body is mapped partially or entirely onto the narrator´s body. That is, the speaker re-enacts the character's actions from a first-person perspective through embodiment (Stec 2013). So-called *dual viewpoint* gestures may profile these two different perspectives simultaneously (McNeill 1992). Parrill (2012) further identified gestures signaling *narrator viewpoint* as metanarrative gestures with metaphoric dimension: while verbally describing a given scene, the speaker presents the referent in the form of an imagined object on a palm-up open hand to the listener.

Parrill (2010) suggests that event structure motivates the choice of viewpoint. For example, movement trajectories primarily evoke OVPT, whereas other aspects such as handling an object, use of the torso, and emotional state or affect predominantly induce CVPT. Using an Ugandan short film with human actors as stimulus material, the present study investigates whether tabooed discourse *contents* may influence the speakers' use of gestural viewpoint. 30 bilingual native speakers of both Luganda and Ugandan English were asked to retell the film once in each language (Author 2012). The analysis focuses on the recounts of a film sequence featuring a scene of adultery, involving two characters in an emotional state, moving bodies and heads, and the handling of an object.

The results of the analysis resonate with Parrill's (2010) findings for most of the film retellings except for the descriptions of the taboo scene. In the English narrations, OVPT was found to be the preferred strategy of gestural construal of problematic discourse contents, followed by narrator viewpoint. In the Lugandan data, narrator viewpoint was predominantly used; OVPT was employed significantly less. In both languages only few cases of CVPT or dual viewpoint gestures were found, predominantly in the stage-setting parts of the narration not involving taboo discourse. The findings thus suggest that tabooed discourse content may predispose narrators to adopt OVPT or narrator viewpoint in their gestures. Through distancing themselves from the described scene using OVPT or narrator viewpoint, speakers take a neutral or distanced position towards the content. By contrast, through adopting CVPT when reenacting parts of a film scene, speakers include themselves in the narration and do not distance themselves from the discourse contents. Overall, this study shows that speakers' stance toward discourse contents may shape their viewpoint practices.

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Experiencing artworks from within: Simulated artifact immersion as viewpoint strategy in transmodal enactments of paintings and architectural sketches

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Background

Viewpoint, a flexible construal operation, may shape expressions and discourse structures in spoken and signed languages, as well as other modalities and media (e.g., Dancygier & Sweetser 2012). Being indexically anchored in rich semiotic contextures (Mittelberg & Waugh 2014), gestures and full-body enactments tend to reflect perspectivation: one may, e.g., describe an experience or film scene from within by adopting *character viewpoint*, or from a distance by assuming *observer viewpoint* (McNeill 1992). Communicative action typically not only exhibits subjective aspects of the gesturer's own bodily and mental disposition and what she profiles as particularly relevant; it also embodies others' experiences and perspectives intersubjectively. Speakers of different languages have been observed to combine multiple, often shifting viewpoints on a given scene using various viewpoint markers regardless of whether the scene is something they witnessed first-hand, part of a story told to them, or of an artifact such as a cartoon or a novel (e.g., Parrill 2009; Sweetser 2012; Stec 2013).

Exploring the transmodal dimensions of *simulated artifact immersion*, this paper investigates viewpoint strategies speakers employ when combining speech, manual gestures, full-body postures and actions when dynamically describing static visuo-spatial artifacts such as paintings and architectural sketches. The term *transmodal* goes back to Krois' (2011: 218) ideas on the connection between embodiment and enactivism in the visual arts, particularly to his claim that for the beholder images are not simply visual but transmodal phenomena (see also Johnson 2007). *Simulated artifact immersion* here is understood as a viewpoint technique by which speakers submerge into their mental representation of an artifact, e.g. through viewing and experiencing a painted scene or architectural sketch/model from within – without any artifact-inherent narrative structure to fall back on.

The first data set consists of multimodal American English descriptions of paintings by Paul Klee, in which human-like figures take center stage. In their descriptions from memory, participants elaborate the imagined scenarios through creatively interacting with the affordances offered by the image-internal elements and environments (Mittelberg 2013). Crucially, they systematically perform viewpoint shifts when – after detailing the composition and background of a given painting from observer viewpoint – they begin to describe the figures in the painting from character viewpoint, thus imitating their posture and enacting what they are wearing, doing and perhaps sensing from this picture-internal vantage point. In the second data set (multimodal German discourse), architecture students simulate moving through imagined spatial structures and landscapes that they either have already designed or that they see emerging in front of their mental eye while communicating their ideas in the early stages of the design process. Besides viewpoint shifts, varying techniques and degrees of simulated artifact immersion could be observed.

Interacting embodied operations such as gestural simulation (e.g., Hostetter & Alibali 2008), abstraction, metonymy and metaphor are discussed throughout the paper, while trying to reconstruct complex embodied cognitive-semiotic processes of imagining, conceptualizing, representing, and creating artifacts in an experientially grounded, multimodal fashion.

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The Same, but Different: An Ontology of Expert and Amateur Interactions with Technology

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Background

This paper aims to investigate the ways in which prior experience impacts upon our reception of (our *reading* of) our material technologies. By focusing on the distinction between amateur and expert experience with e-readers as distinctive multi-modal artefacts, the paper demonstrates how the perspectives that amateur and expert users take results in the production of ontologically discrete objects – in a real way the same Kindle is a different thing to the first-time novice and to the "switched-on" power user and this is a product of the viewpoints that they are able to adopt. The phenomenological philosopher Edmund Husserl (see e.g. 2002) describes the appearance of objects as products of both immediate perception and co-present "adumbrations" that exist beyond the horizon of our current experience (e.g. the back of the iPad is part of my perception of the device even if I'm currently viewing it from the front; I expect it to be there and I'm not surprised when I change my view and see that it is). Experience fleshes out these adumbrations, challenging the idea of viewpoint as being simply about encountering what's in front of us - viewpoint also includes what we know to be missing. Following this lead, the proposed paper will offer an ontological underpinning for understanding the impact on adumbrated viewpoint of the always-combined forces of culture, embodiment, materiality, milieu, and the deployment of artefacts (Author 2015).

Amateurs and experts produce differently encounterable objects from the same artefact, objects with different real effects in the world. The amateur user finds the Kindle cumbersome and complex without knowing all of its parts; the expert user finds it simple, or at least knows it quirks; the engineer knows its guts and why it might not be working; the programmer knows the layers of code that manifest a novel on screen – four different objects (one to be frustratingly read, one to be usefully read, one to be built and fixed, and one to be written on), but always a single artefact. In exploring this distinction in perspective and practice, the approach taken will be broadly post-phenomenological (see e.g. Ihde 2009 and Verbeek 2005), but will also draw on challenges to the phenomenological tradition from recent object-oriented philosophy (see Harman e.g. 2010) and cognitive science. These fields are each impacted, however, by paying attention to how language, metaphor, and embodiment intertwine in our encounters with technology.

That language plays a role in the ways in which we see the world is one of the fundamental insights of cultural criticism – cultural forces shape our perception of our environments, our being, and the status of our fellow humans. The Sapir-Whorf hypothesis, and linguistic relativism more broadly, have been problematic themes in cognitive science (to say the least!), but a recent thread of empirical studies has returned to considerations of language's explicit (and measurable) priming of action and perception (e.g. Landau et al 2010). Similarly the role of gesture and haptics in human encounters have been theorised and tested (e.g. Symes et al 2011, Dotov et al 2010), and, in response to such research, cognitive linguistics has expanded the study of language to include a vital embodied component. The role of metaphor, as a nexus of language and embodied concern (see, e.g. Lakoff and Johnson 1999), offers further evidence for the shaping of perception through forces which always have this dual tension of shifting culture and unavoidable (if mediated) material reality.

The proposed paper aims to demonstrate a fundamental, i.e. ontological approach to the linguistic, more broadly metaphoric, and embodied effects upon viewpoint that we see in the use of artefacts, effects that stem from our prior experience and expertise.

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Multimodal interaction and viewpoint in internet memes

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Background

Internet memes have become a pervasive form in on-line communication (Shifman 2013, Wiggins and Bowers 2014). Given their increasing role in structuring interaction, it is time to consider the way they function in communication as multimodal artifacts. While existing descriptions have focused mainly on issues of definition, genre and spread, we show how their use of linguistic forms and images creates viewpointed dimensions of interaction.

What distinguishes memes from many other forms of creative expression is their interactive character. Typically, a meme starts with a popular artifact (e.g., an ad, a quote or a song), which becomes recognizable to a group of users and thus carries a frame (Fillmore 1982) that can then be built on. The frame is then reused through adding text, rephrasing, substitution, extension, etc. We show how such edits are driven by new viewpoints and how the resulting emergent viewpoint blends constitute a form of ongoing interaction among users who only share an internet medium – an interactive website, a form of social media, etc. Memes go 'dormant' for a while, but when a new interesting event attracts the users' attention, they are quickly re-construed to comment on the recent situation. As such, they provide a multimodal version of a long-distance conversation, specifically through proposing new (often humorous) viewpoints.

In the talk, we will closely analyze two series of memes. One emerged after the unfortunate line of Mitt Romney's, about *binders of women*. In itself a not-too-graceful metonymy, the phrase went through a long chain of viewpoint reframings, generally addressing the social status of women, but primarily 'viewpointing' Romney's words in increasingly extreme ways. The shifts included additions of new lines, old meme visuals and new visuals, songs, while evoking various strongly viewpointed frames of the roles women play in various situations.

The second meme, "said no-one ever" is mostly textual and in its very form contrasts two viewpoints – of someone who might say, for instance, *Your Facebook status really made me change my political views*, and then another person who comments with the stable *said no-one ever* line. While presenting two contrasting viewpoints in the meme itself, new iterations currently circulating on the web also start off with other viewpoints, for instance focusing on stereotypes (as in *said no student ever, said no TSA agent ever*) or subverting the expected format (e.g. *says everyone all of the time; (says) every digital language learner ever*).

Jointly, examples such as these and others we will touch on reveal many salient features of meme communication. Some of the observations we will discuss are as follows: a) the textual form of memes gradually achieves constructional status, as do some visual patterns (such as the division of labour between 'top text' and 'bottom text'), and the construction is frame-metonymic (Sweetser and Fauconnier 1996) for the entire interaction and viewpoint pattern; b) subsequent steps in the re-construal of the meme (visual or textual or both) constitute steps in a (rather lighthearted) discussion of how the current event is to be understood; and c) the formal changes and the flow of interactive re-construal are driven entirely by viewpoint – the nature of the matter under discussion does not change. Memes thus provide a window to a better understanding of viewpoint in interaction.

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What a study of smell can tell cognitive linguists

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Background

It is widely-held that people find it difficult, if not impossible, to put smells into words. English speakers struggle to identify common smells, typically only correctly identifying odour sources around 50% of the time. This difficulty is peculiar to smell: under normal circumstances people easily name visual entities, such as colour. So, why is it so hard to name smells? One possibility lies in our underlying neural architecture. Psychologists point to the fact that the neuroanatomical links between smell and language centers in the brain are poorly connected. Another possibility lies in our ability to perceive smells at all. Biologists point out that as humans evolved trichromatic vision, they lost many olfactory receptor coding genes. So, perhaps we just don't smell things as well as we could. A third possibility lies in the nature of our linguistic system itself. We simply don't have words for smells. According to Sperber (1974, p.115):

> "In none of the world's languages does there seem to be a classification of smells comparable, for example, to colour classification. Ethno-linguists systematically describe colour classifications, often containing several hundred terms ordered under a small number of basic categories (and which are probably universal – see Berlin and Kay 1969 and Conklin's discussion [Conklin 1973]). We would search in vain for a similar work on smells; perhaps this is a sign of lack of imagination on the part of scholars, but more likely it is because there is nothing for such a work to be about."

In this theme session we highlight emerging work on smell lexicons in the world's languages which casts doubt on some current dogmas regarding our olfactory sense. From hunter-gatherers to wine-experts, communities have developed language games in order to express their odour experiences. This session shows the search for smell lexicons is not in vain, but a promising venue to re-examine hypothesised links between language, cognition, and culture.

Contributors

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Smell descriptions in hunter-gatherers and wine-experts

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It is widely-held that people find it difficult, if not impossible, to put smells into words. For a psycholinguist, this begs the question: what does it mean to be able to "put something into language"? Are all experiences equally amenable to linguistic description, or is smell really more ineffable across languages (cf. Levinson and Majid, 2014)? A recent study with the Jahai of the Malay Peninsula (Majid & Burenhult, 2014) demonstrated that the difficulty with naming smells is not universal. Jahai speakers found it as easy to name odours as they did colours: they were equally consistent for both domains. They also gave comparably concise descriptions, and provided abstract descriptors (rather than source-based descriptions, e.g., *smells like a rose*). This suggests that smell might not be as difficult to describe as previously supposed.

It also raises the question of what factors might be responsible for the ease with which Jahai speakers name smells. Perhaps cultural experience, in particular specialised training with odours is important. The Jahai are hunter-gatherers and therefore, arguably, smells are communicatively important in localising foods and avoiding environmental hazards. In Western societies there are also specialists who make nuanced distinctions between odours, for example, wine and coffee experts. So, are these odour specialists as good as the Jahai in naming smells? It is not clear from the previous literature whether Western experts really are better at odour naming (e.g., Hodgson, 2009). In order to test this, wine experts, coffee experts, and novices were asked to describe the smell (and flavour) of wines, coffees, pure odorants, and tastants. The descriptions were analysed using the protocol described by Majid and Burenhult for the Jahai. The results suggest that Western expert groups do not have an advantage in naming odours in comparison to novices. Taken together the results show there is considerable variation in the strategies different groups and sub-groups use to talk about smell. This means that the relationship between language and perception must be a function of our (linguistic) experience, rather than simply a matter of our biological heritage.

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Smell terminology and cross-modal smell associations among three culturally and linguistically diverse groups

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Background

Languages often conflate sensory impressions through "synesthetic metaphors" – polysemous expressions mapping across sensory domains. The specific metaphors differ across languages. For example, in English it is common to speak about *sharp* smells, while in Chinese people talk of *clear* fragrances (Yu, 2003). But little is known about the possible factors underlying these cross-linguistic differences. This study investigates the sensory underpinnings of cross-modal language by comparing olfactory cross-modal associations and linguistic descriptions of odors across three culturally and linguistically diverse groups.

Cross-modal associations involving odors were tested in two domains: one that has previously been investigated cross-culturally – color, and one that has not yet been explored cross-culturally – temperature. The study was carried out in three distinct cultures: Maniq, Thai, and Dutch. It is a diverse sample as it includes two non-Western communities – one urban (Thai), and one of forest-dwelling nomads (Maniq) – as well as a Western urban sample (Dutch). Participants were asked to smell the stimuli in non-transparent plastic bottles and asked to indicate the color and the temperature that matched with a given smell. Colors were selected by pointing to one of 84 equally-sampled chips, while temperatures were selected by touching one of two plastic cups filled with either warm or cold water. The matching task was followed by an odor naming task, in which participants were asked to provide linguistic descriptions for the same set of stimuli. Since the three languages differ significantly in their olfactory lexicons (cf. Wnuk & Majid, 2014), linguistic and non-linguistic tasks were combined within this study to explore the possible relationship between olfactory language and the cross-modal associations.

The results reveal differences in associations across the three communities, suggesting culture plays a significant role in forming cross-modal correspondences. Similarly, variation in the lexical means employed in smell descriptions highlights language as another relevant domain. Altogether, these cross-sensory explorations are an instructive case study shedding light onto interrelations between culture, language and cognition.

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Seri smell verbs in the 21st century

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Background

The sense of smell has been widely viewed in various disciplines as inferior to other senses, such as vision, touch and taste (Henning 1916; Plato 1961; among others). This general view corresponds with the lack of treatment of olfaction in ethnographies, similar to what has been observed with respect to the treatment of the senses across disciplines (Majid & Levinson 2011). This lack of attention could be related to the fact that linguists or anthropologists describing a particular language or society are predisposed to expect that olfaction is not elaborated due to the lack of odor lexicalization in the particular language they speak and the odor categories they are predisposed to (Levinson & Majid 2014).

As a response to this tendency in the literature, here I look at data from the olfactory lexicon in the Seri language, an isolate spoken by a traditionally hunter-gatherer society along the coast of northwestern Mexico. Of particular interest are the abstract odor concepts that are lexicalized and the cultural role these odor concepts play in traditional Seri practices, many of which are becoming less salient in everyday Seri culture due to changes in their lifestyle as a result of increasing contact with the neighboring non-Seri Mexicans. The Seri odor lexicon consists of monolexemic stative verbs that do not make reference to a particular odor source, as is illustrated with two examples in (1).

(1) a. *-heemt* 'used to describe smell of feces, rotten food, sea lion, whale, dolphin, shark, things that come from the sea'
b. *-asa* 'same extension as *-heemt*, but according to one speaker, shows little respect and can be offensive'

The stative smell verb roots in Seri can be observed in lexicalized expressions that refer to plants, animals and states, as shown in (2), where the smell root is bolded.

(2) a. *haapis c**asa*** 'coyote tobacco (Nicotiana trigonophylla)' (lit. tobacco that stinks)
b. *ziix yacop c**asa*** 'earwig (Dermaptera)' (lit. thing whose stinger stinks)
c. *hant c**heemt*** 'be bad weather' (lit. land that stinks)
d. *iisax c**heemt*** 'be mad' (lit. its spirit that stinks)
e. *ihiim c**heemt*** 'have nightmare' (lit. its dream stinks)
f. *imoz cöc**asa*** 'detest [food]' (lit. its heart where it stinks)

Contrary to sensory meaning extensions in English where smell has few abstract connotations (Sweetser 1991), Seri expressions with odor roots, as shown in (2), can be used to indicate internal mental or emotional states, such as being mad, having a nightmare or detesting a particular kind of food. Taking into consideration the important cultural role olfaction plays in Seri culture in curing practices as well as in personal adornment, it is not surprising that in the Seri lexicon we observe a metaphorical extension between these two domains, where smell serves as the source domain to metaphorically express emotional or mental states.

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Talking about smell in Kuteb

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Background

Smell has been described as difficult to put into words, especially as compared to other senses. One proposed explanation of this phenomenon is the lack of abstract terms for smells comparable to words like 'red' for colour in English (cf. Levinson & Majid 2014). However, recent studies on Aslian languages, spoken in the Malay Peninsula, challenge the claim that this is a general limitation in languages. For example, speakers of Jahai have a number of abstract terms to describe smells and they do so with the same consistency as they describe colours (Majid & Burenhult 2014). Smell terminologies have also been reported for a number of languages in Africa. Nevertheless, it remains unclear for many languages how speakers use these terms.

This study focuses on one African language that has been reported to have specific terms for smells: Kuteb, a Jukunoid language spoken in East-Central Nigeria. The smell terms in Kuteb are nouns and differ from the stative verbs attested in the description of vision, taste, or touch (cf. Koops 2009). In order to obtain systematic and comparable linguistic data, naming tasks with olfactory and tactile stimuli were conducted. The results showed that consistency across speakers in descriptions of smells were relatively low compared to the descriptions of tactile stimuli. This could be attributed to several factors. One important factor seems to be the specific semantics involved: Kuteb smell terms refer to the hedonic value, or intensity of smells, and/or another property of the smell or the smell-emitting source. In general, speakers preferred source descriptions (about half of the responses), while the use of dedicated smell terms was only a minor strategy (about one quarter of the responses). Moreover, the varying repertoires of terms used by speakers suggest smell terms do not constitute a shared lexicon within or across Kuteb dialects. By contrast, the terms for touch encode qualities, and were used as the dominant strategy in responses across speakers. Thus, the Kuteb case shows that the mere existence of dedicated smell terminology does not lead to high consistency in odor naming.

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Odiferous affect roots in Huehuetla Tepehua

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Background

Recent cross-linguistic studies have brought to light variation in lexical and grammatical patterns of perceptual experiences, including the sensual experience of smell. While some overstudied languages like English prove to have deficient means for encapsulating olfactory experiences into single lexemes, other languages exhibit large classes of lexemes that express abstract odor categories (e.g., Burenhult 2011). The latter such languages provide us with valuable information about human conceptualization of the senses (Majid & Levinson 2011).

In the languages of the Totonac-Tepehua family of central Mexico, lexemes that refer to sensory perceptions fall into a large class of ideophonic, sound symbolic roots (see Beck 2008; Kung 2007; among others), which we call affect roots (AR). Within this class, the Totonac branch of the language family in particular has a rich class of smell terms (Aschmann 1946; Enriquez Andrade 2010; among others). However, the domain of olfaction in the Tepehua family branch has been largely overlooked.

In an attempt to remedy this gap in the literature, we ran an odor naming task with 20 native speakers of Huehuetla Tepehua (HT), a moribund indigenous language spoken in Hidalgo, Mexico. We found that HT speakers--like their Totonac neighbors--conceptualize abstract odor categories by means of lexicalized odor terms. These odor terms by and large fit into the larger class of affect roots in the language. HT affect roots--including the smell terms shown in the following examples--exhibit four distinct patterns (Kung 2007). They occur in the adverbial position before the verb (1). They can be iteratively reduplicated in various ways, one of which (complete reduplication) is shown in (2). They exhibit sound symbolic phonemic alternations that represent degrees of intensity, as in (3), in which /s/, which indicates lesser intensity, alternates with /x/, which indicates greater intensity. They can form phonologically related lexical sets, which may or may not represent a difference in hedonic value (4).

1	*naa*	*waa*	*s'aj*	*'akamin*	*juu*	*x-'as'at'a*
	very	foc	ar	smell(impv)	art	3pos-child
	'The child smells very sour (e.g., from sweat).'					

2	*chiix*	*chiix*	*'akamin*	*juu*	*lapanak*
	ar	ar	smell(impv)	art	person
	'The person smells of urine.' (Kung 2007: 435)				

3	a.	*suun*	'a bitter smell'
	b.	*xuun*	'a bitter smell stronger than suun'

4	a.	*mukuku*	'a pleasant smell' (e.g., perfume)
	b.	*mo'o'o*	'an unpleasant smell' (e.g., something spoiled)

In this talk we present an overview of the HT odor terms, looking at both their structural and semantic properties, with especial attention to the types of concepts that get lexicalized in the HT odor domain. We explain the specific grammatical patterns used in the olfactory domain, as well as in the larger class of affect roots, and we illustrate how these processes can systematically derive new words with related sensory properties. The odor terms in HT provide additional information to further our understanding of how humans conceptualize sensory perception and how language encodes these concepts.

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Smell and the other senses in conversation

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Compared to the 'higher senses' of sight and hearing, it has been argued that the sense of smell has only limited importance to humans, and is universally problematic to encode linguistically (e.g., Gardner 1993, Sperber 1975). Examining perceptual vocabulary can give insight into these assumptions, for example offering evidence as to whether a supposed 'hierarchy of the senses' is culturally and linguistically mediated or physiologically entrenched (e.g., Evans and Wilkins 2000, Majid and Levinson 2011, Sweetser 1990, Viberg 1983). However, the use of perceptual vocabulary in face-to-face conversation, our main forum for the sharing, manipulation, and negotiation of perceptual experience through language, has rarely been the focus of cross-linguistic study.

I first review findings from a collaborative investigation of basic perception terms, including verbs such as *see*, *hear* and *smell*, in spontaneous conversation across 13 diverse languages and cultures ([Author] et al. in press). The presence of multi-sense terms in perception vocabulary raised special challenges for cross-linguistic comparison of the perception lexicon, which were addressed by attending to the meanings of words in context. The study found that references to sight outstripped references to the other senses, and that references to smell were generally very low frequency. However, these tendencies were not universal, as shown, for example, by the high relative ranking of smell terms in Semai, an Aslian language.

Building on this work, I expand the original study to include a developmental dimension, examining the use of sensory terms in child language. For English, dominance of vision appears to be reflected in children's frequency of use and the order in which they acquire perception verbs (cf. Bloom et al. 1989). But what meanings and contexts are associated with a child's early exposure to the perception lexicon? It has been argued that first uses of vision verbs in fact focus on metaphoric and pragmatic uses, as opposed to literal descriptions of perceptual experience (Edwards and Goodwin 1985, Johnson 1999). Broadening the field to other senses, I find that terms from each perceptual domain may have particularly salient niches of use in English child-adult interaction. Early input and production of audition-related terms may be especially associated with talking about the perception of speech, while smell-related terms are often tied to the evaluation of odours, objects and situations as pleasant or unpleasant.

Conversational data provide a rich resource to evaluate claims about the universality and relativity of perceptual language and to explore how we may be enculturated into particular ways of understanding and talking about perceptual experience.

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