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Abstracts

Plenaries

Perspective-marking grammar in child acquisition: Linguistic and sociocognitive development

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The languages of the world provide speakers with linguistic tools for explicating their own and others' perspectives on things and events in the shape of a wide variety of specialized perspective-marking constructions coding the attention, belief and knowledge of human conceptualizers as well as alignment and divergence between these perspectives (Dixon 2006, Duijn & Verhagen 2018, Evans 2010, Evans, Bergqvist & San Rogue 2018a, b). Such perspective-marking grammar helps speakers coordinate their cognitive states and manage differences between them (Verhagen 2005), and within cognitive linguistics, the crosslinguistically central role of perspective marking in grammar is expected to reflect core human sociocognitive ability and motivation to coordinate with fellow human beings as attentional and mental beings (Verhagen 2005, Evans et al. 2018a). While drawing on insights from psychology (e.g. Tomasello et al. 2005), these cognitive linguistic studies do not investigate the hypothesized relationship with social cognition directly. To examine the nature of this language-cognition relationship, children's acquisition of linguistic perspective marking offers a useful window, as it allows us to disentangle to which degree acquisition of perspective-marking grammar depends on prior sociocognitive skills and to which degree linguistic development affects these skills.

In this talk, I present a suite of studies targeting children's acquisition of linguistic perspective marking and its relationship with sociocognitive development. Starting from corpus studies demonstrating typically developing children's rich and nuanced spontaneous use of two different types of perspective-marking grammar (complement clauses and engagement particles) in peer group conversations (2-6 years), I turn to experimental studies directly examining the interplay between linguistic and sociocognitive development. Presenting evidence from longitudinal and training studies in both typical and atypical development, I show how children's acquisition of perspective-marking grammar affects their sociocognitive development by supporting their abilities to represent and reason about mental states. The results further suggest a bidirectional relationship, with early sociocognitive skills also predicting later skills with linguistic perspective marking.

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Every science repeats the (bipartite) structure of a belief: a plea for structural monism

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'Methodological monism' (a. k. a. positivism) is a familiar notion. It is the idea that natural sciences, epitomized by classical mechanics, provide the only legitimate model for scientific data-collection and explanation. This line of thinking may have lost adherents in recent years and decades, but it is still alive, in spite of such shortcomings as have often been pointed out (recently e.g. in Itkonen 2019: Sect. 2 and 2020: Sect. 2).

In this talk I intend to argue for a different kind of monism, namely **structural** monism. Its point of departure is quite simply the notion of **belief**. Every belief has two parts, which can roughly be characterized as 'form' (= A) and 'content' (= B). A is impersonal while B is personal; A is timeless while B occurs in time; A participates in logical/conceptual relations while B participates in associative relations; and so on. In sum: "Every belief must have both a history and a logic; for they are concerned with different elements of the belief" (Edgley 1978/1965: 24).

It is the thesis of structural monism that every science (apart from logic and mathematics) exemplifies the same bipartite structure, which is ultimately that of a belief. In the scientific context, A is the conceptual precondition for B in the sense of investigating the categorization which applies to phenomena investigated by B.

This thesis may not be surprising in itself, considering that all sciences can be regarded as belief-systems. But in this respect there are also interesting **differences** between sciences. In some sciences, their bipartite nature has been fully acknowledged or sanctioned in the form of (approximately) corresponding distinctions both between university departments and between professional journals. But in other sciences, their bipartite nature may either remain implicit or be acknowledged only by a minority. It is an intriguing task to explore the **causes** of these differences: Are they due to intrinsic differences among the subject matters of the respective sciences? Or are they just due to historical accidents?

In **linguistics**, it is reasonably well understood that A and B address distinct questions, in such a way that asking the B-question presupposes at least a preliminary answer to the A-question. For instance: A = **What** is the relative clause in a language L? vs. B = **How** is it produced and understood, and **how** has it changed? A = 'autonomous' (non-causal) linguistics (cf. Itkonen 1978) vs. B = 'non-autonomous' (causal) linguistics (cf. Itkonen 1983). As long as the child is learning L, s/he endorses the B-attitude (= s/he accumulates observations and makes generalizations about the observations s/he has accumulated), but as soon as s/he masters L, s/he endorses the A-attitude (= s/he is competent to evaluate observations as either correct or incorrect): L, having first been *a posteriori*, becomes *a priori* (cf. Mäkilähde et al. 2019). It

goes without saying that, at the level of data, the A vs. B distinction coincides with the *langue* vs. *parole* distinction.

In **psychology**, the A vs. B distinction is not generally acknowledged, with important exceptions, such as Brentano and Husserl. Brentano: A = 'descriptive psychology' vs. B = 'genetic' psychology. Husserl: A = 'descriptive/empirical phenomenology' (distinguished from 'transcendental phenomenology') vs. B = empirical psychology. Examples of A: (i) "An act of will is a want which we have arrived at by coming to a decision and which we think we are able to implement" (Brentano quoted by Chisholm 1967). (ii) The intentional (= 'directed') structure of conscious experiences is the starting point of Husserl-type phenomenology (cf. Vuorinen 1971, Juntunen 1986). (iii) Whatever is perceived is perceived as mediated by the 'figure vs. ground' contrast. (iv) Whatever is seen, is always seen as having some kind of extension in two or three dimensions. (v) (*Addendum*) Von Wright's (1963: Chapter III) taxonomy of actions: 'the doing of *p*', 'the destroying of *p*', 'the preserving of *p*', 'the suppression of *p*', as well as the corresponding forbearances; cf. (i) above.

In 2022, YOUTUBE reveals that 'phenomenological psychology', blurring the A vs. B distinction (but with a strong A-emphasis), has become a popular discipline which overlaps with psychotherapy.

In **classical physics**, the A vs. B distinction has been fully acknowledged in Germany, but not so much elsewhere. A = **protophysics** vs. B = Newtonian mechanics. A is a general theory of measurement, divided into the increasingly complex subdomains of measuring space, time, and mass (= geometry, chronometry, and 'hylometry'). Instead of investigating actual physical events, protophysics investigates the concept 'possible physical event', as defined by the threefold norms of measurement: "Die idealen Forderungen, durch die die vollkommenen Messungen bestimmt werden, sind Sätze die als Axiomen für die protophysicalische Theorien dienen können" (Lorenzen 1969: 150). There is a perfect **analogy** between linguistics and classical physics, as here defined: A = **possible** (sentence or physical event) vs. B = **actual** (sentence or physical event) (cf. Itkonen 1978: 45).

Quantum physics and Relativity Theory may in some sense have superseded Newtonian mechanics, which nevertheless remains able to account for its chosen realm of phenomena. Therefore protophysics, qua its aprioristic component, also retains its intrinsic value (cf. Janich 1976: 302–314).

The **analogy** between psychology and (classical) physics was clearly grasped by Husserl, which entails that he in fact envisioned the notion of protophysics *avant la lettre*: "That the knowledge of the possibilities always precedes that of the actual course of events is one motivating force in Husserl's thinking. … Like in physics, the a priori statements of

psychology are logically prior to any factual propositions, although one may proceed to their comprehension in the opposite direction, …" (Vuorinen 1971: 76-77).

The analogy between A- vs. B-type **chemistry** and A- vs. B-type linguistics was endorsed by Chomsky (1957: 48): "Perhaps the issue can be clarified by an analogy to a part of chemical theory concerned with the structurally possible compounds." First, there is the analogy between A-type chemistry and A-type linguistics: "This [chemical] theory might be said to generate all structurally possible compounds just as a grammar generates all grammatically 'possible' utterances." Second, there is in both cases the B-type study which applies this *a priori* A-framework to **empirical data**: "This theory would serve as a theoretical basis [= A] for techniques of qualitative analysis and synthesis of specific compounds [= B], just as one might rely on a grammar [= A] in the investigation of such specific problems as analysis and synthesis of particular utterances [= B]." As always, A is the precondition for B.

In **biology**, there is the obvious distinction between DNA structure and actual DNAs.

In **sociology**, the situation is much the same as in psychology, insofar as the A vs. B distinction has remained largely implicit, with such notable exceptions as Winch (1958) and Schutz (1962). Winch: A = 'aprioristic sociology' (the study of institutions) vs. B = empirical sociology (the study of institutional behavior); Schutz: A = 'phenomenological sociology' (the study of the structure of social encounters, including 'reciprocity of perspectives') vs. B = empirical sociology (the study of social encounters). The A-type sociology is also known as 'sociology of knowledge' (cf. Itkonen 1978: Sect. 2.4).

Our last example, i.e. **evolutionary theory**, is unlike the others insofar as here A has been chosen so as to be prior to B: "Some authors look at the Natural System merely as a scheme for arranging together those living objects which are most alike and for separating those which are most unlike; or as an artificial means for enunciating, as briefly as possible, general propositions. … But I believe that something more is included and that the propinquity of descent — the only known **cause** of the similarity of organic beings — is the bond, hidden as it is by various degrees of modification, which is partially revealed to us by our **classification**" (Darwin 1998/1859: 312-313; emphasis added). — Compare: "la langue est un principe de classification" (de Saussure 1962/1916: 25).

Darwin's remark can be illustrated by a rough-and-ready cross-scientific-*cum*-cross-historical analogy, justified by Lorenzen (1969: 144): "Die seit Galileo and Newton entstandene klassische Physik ist keine phänomenologische [nicht-kausale] Physik, wie die antike Physik weitgehend war, …":

A	Aristotle		Linnaeus	
	———	=	———	
B	Newton		Darwin	

By now, it should have become clear that my talk is, among other things, meant to be a vindication of **analogy** as an investigative tool. In fact, the title of Itkonen (2005) – *Analogy as structure and process* – formulates the distinction between A- vs. B-type analogy. The full power of analogy, exemplified by its capacity to bring together the core of hermeneutic philosophy and the core of computer science, will be the topic of my contribution (= 'When does the description coincide with its object?) to the SALC workshop 'Exploring normativity in language and linguistics', 19 August 2022. ― Let us conclude with a few caveats:

(i) The object of A-type sciences is not 'timeless' in any absolute sense, but in the same sense as any structure (as opposed to function) can be regarded as such (cf. Itkonen 2021).

(ii) From the start, such 'formal' sciences as logic and mathematics were excluded from consideration. But it is perfectly feasible to envisage a more comprehensive 'science of logic', where A = formal logic vs. B = psychology of logic (cf. Itkonen 2003: Ch. XV = 'Psychology of logic', pp. 147-168). The reason for the original exclusion of logic is that, unlike the other A-type sciences, it is not descriptive but prescriptive: not content to describe existing norms, it strives to create new and better norms (namely, for inference).

(iii) The A vs. B distinction (or some equivalent distinction) is almost universally accepted, but not quite. Davidson and Quine disagree, or so it seems. The latter approvingly quotes (1981: 38-39) the former, who writes: "This dualism of scheme and content, of organizing system and something waiting to be organized, cannot be made intelligible and defensible."

As far as I can see, this remark makes sense only if it is meant to express the self-evident truth that we have no direct access to the Kantian **pre**-conceptualized *das Ding an sich*. But importantly, we do have access to something **almost** analogous. When an adult person P learns to master a foreign language from a scratch, the situation is **exactly** the one captured by Davidson: P starts with "something waiting to be organized" and ends with an "organizing system". Of course, the starting point is not **fully** analogous with *das Ding an sich*, because it has been conceptualized (and verbalized) as "something waiting to be organized". Surprisingly, Quine accepts this semi-analogy: "Where I have spoken of a conceptual scheme I could have spoken of a language" (p. 41). And he tells us that Davidson too is happy to accept 'scheme' being replaced by 'language'. In sum, the whole disagreement disappears. (Or does it? And if it does, what was it about, in the first place?)

(iv) *La grandeur et la misère de l'analogie*, as exemplified by Leonardo da Vinci: On the one hand, he was **the** master analogist, discovering — among many other things — the common ramifying structure of river deltas, tree branches, and blood vessels. On the other, his famous picture of the 'Vitruvian Man', enclosed both in a square (= X) and in a circle (= Y), contains two crucial mistakes. First, and contrary to the Renaissance view, there is no real-life analogy between 'terrestrial man' (= X) and 'cosmic man' (= Y). Second, and again contrary to the Renaissance view, there is no fundamental difference between 'sublunary' motion (= square), i.e. motion on the Earth, and 'superlunary' motion (= circle), i.e. motion in the Heavens (as Galileo and Newton were soon to prove). Still, Leonardo manages to create a brilliant synthesis of two wrong ideas.

Let us summarize the main topic. In all sciences, researchers make the A vs. B distinction but in human/social sciences it is made, at the level of data, **also** by research objects, as explained by Trubetzkoy (1969/1939): "The basis for this distinction is that the system of language [= *langue*] as a social institution constitutes a world of relations, functions, and values, the act of speech [= *parole*], on the other hand, a world of empirical phenomena. There is no parallel for this in the natural sciences such as botany and zoology. Therefore, these cannot be considered for comparison. But the **same** type of relation is found in **all** the social sciences insofar as they deal with the social evaluation of material things. In all such cases the social institution per se must be strictly distinguished from the concrete acts in which it finds expression, so to speak, and which would not be possible without it" (p. 12; emphasis added).

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Lexico-Encyclopedic Conceptual (LEC) Metaphors

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Metaphor theories have traditionally focused on the level of language, or on the level of thought. However, more recently it is commonly argued that multiple interacting constraints shape metaphorical meaning (Gibbs Jr & Santa Cruz, 2012; Ruiz de Mendoza Ibáñez & Pérez Hérnandez, 2011). Accordingly, my psychological and corpus linguistic surveys suggest that linguistic metaphors are neither merely lexical, nor merely a reflection of more schematic metaphorical mappings between cognitive domains, but conceptual mappings that involve speakers' embodied experiences of the specific concepts represented by the lexical items that they use. They are "lexico-encyclopedic conceptual (LEC) metaphors" (Johansson Falck, 2018, 2022) from which we may gain insights into how speakers' embodied understandings of the world around them, through affordances (Gibson, 2015), help them structure, re-experience, and metaphorical mappings at more schematic levels of abstraction (Lakoff & Johnson, 1980/2008, 1999). In this presentation, I introduce the notion of LEC metaphors along with a method for identifying metaphors at this level of abstraction (Johansson Falck & Okonski, 2022, accepted).

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Iconicity, not arbitrariness is a design feature of language

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Language is traditionally thought to be arbitrary. In describing his foundational "Principle I: The Arbitrary Nature of the Sign," Ferdinand de Saussure (1916) discussed how the same concept can be expressed with completely different word forms, such as English *tree* versus Latin *arbor*. This seems to clearly evidence that form most often does not directly correspond to meaning. Iconicity, the resemblance between form and meaning, was argued to be marginal, confined to a small number of onomatopoeias, such as English *bang* and *beep*. Following Saussure, Hockett (1960) characterized arbitrariness as a "design feature" of language, something that distinguishes human language from animal communication systems. The importance of arbitrariness has been "the received view" for decades (Perniss et al., 2010), with iconicity held to be of secondary status.

In this talk, I will argue that iconicity may be a better candidate for a "design feature" than arbitrariness. The first part of my talk will be empirical, focused on evidence showing that iconicity is widespread in spoken and signed languages, where iconicity has also been evidenced to perform important functions in acquisition and evolution. The second part is more theoretical, where I will outline how discussions often confuse 'arbitrariness' with 'conventionality' (cf. Keller, 1998), or conflate the idea of alternative structures (*tree* versus *arbor*) with the separable idea of non-iconicity (Planer & Kalkman, 2021; Watson et al., 2022). Following Flaksman's (2017, 2020) notion of "de-iconicization", I will make a case for arbitrariness being epiphenomenal, the result of moving away from originally iconic forms via regular processes of language change. From this perspective, arbitrariness is not itself an evolutionary target. Moreover, whereas the empirical evidence shows that speakers and signers often use iconicity at various levels of linguistic analysis, it seems hard to conceive that language users would actively strive to be arbitrary in most everyday conversations. Taken together, all of this argues for reconsidering the status of arbitrariness vis-à-vis iconicity.

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Oral presentations

På, *i*, *for* or *til* - a comparative analysis of preposition anomalies in L1 and L2 Danish

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Prepositions in a second language are notoriously difficult to master (Jarvis & Odlin 2000, Jarvis & Pavlenko 2008). Even advanced learners of Danish as L2 use prepositions in unconventional ways. Unconventional use is also found in texts by native speakers of Danish. Native speaker variation could be due to regional, group-based and individual differences (Brøndal 1940), but may also be caused by crosslinguistic influence, typically from English (cf. Gottlieb 2004).

In this study, we analyze the quantitative and qualitative similarities and differences between preposition anomalies in L1 Danish and L2 Danish. The study is based on two corpora of naturally occurring texts: 27 essays by Danish high school students (a total of 42.132 words) and 28 texts by students studying Danish at a language school in Copenhagen (CEFR level A2- B1), who have English as their L1 (5.685 words). We compare the frequency and types of anomalies for four frequent prepositions in Danish: *til*, *i*, *på* and *for*. These four prepositions have a partial semantic and distributional overlap with the English prepositions *to*, *in*, *on* and *for*.

The results show that preposition anomalies are 10 times more frequent in the L2 texts, but that both L1 texts and L2 texts exhibit cases of:
- omitted prepositions, e.g. omitted *på* in *tvivler [på]* om (English translation: 'doubt **[on]** whether'),
- superfluous prepositions, e.g. anomalous use of *til* in *besøge **til***, (English translation: 'visit **to**'),
- confusion of two prepositions, e.g. anomalous use of *fra* instead of *af* in *glemt **fra [-> af]** deres familie* (English translation: 'forgotten **from [->by]** their family').

Some anomalies are characteristic of L2 texts, e.g. overgeneralized use of *til* and *i*. Other anomalies appear to be exclusive to L1 texts. Crosslinguistic influence seems to occur in both L1 and L2 texts, but with differential manifestation, such that L2 users seem more affected by phonological similarities between Danish and English than L1 users (cf. Haspelmath 2009). We discuss the similarities and differences in the conventional use of prepositions on the basis of syntactic and semantic analyses, focusing on valency bound prepositions and spatialtemporal prepositions.

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Understanding primary school children's narrative listening comprehension: the effect of background noise, linguistic background, socio-economic status and cognition

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Background

A quarter of Sweden's primary school children have Swedish as their second language (sequential bilinguals). These children can have trouble reaching primary school's learning goals to a greater extent than children with Swedish as their first language. Comprehension of the school language is essential for school success. Several factors influence children's language comprehension: language background, socio-economic status (SES), complex working memory, phonological short-term memory and background noise. During early primary school, comprehension is often assessed though narratives.

Aim

The aim of this cross-sectional study was to explore how background babble noise affects narrative listening comprehension in children attending schools in socio-economically disadvantaged areas, and how factors known to influence language proficiency impact their comprehension. Our hypothesis was that children with less exposure to Swedish would be more negatively affected by background noise.

Methods

85 typically developing children attending school grades 2 and 3 (Swedish system; ages 7-9 years) in low-SES areas completed a narrative listening comprehension task (LFM) in two listening conditions (quiet and background babble noise), a crosslinguistic nonword repetition test and a backward digit span test. They were divided into three language background groups (sequential bilinguals, simultaneous bilinguals and monolinguals), and three parental education levels (primary school or below, secondary education and tertiary education). Results are based on two linear mixed models: one for the whole sample (n = 85) and, to include duration of Swedish exposure, one for only the sequential bilinguals (n = 53).

Results

In the whole sample, preliminary results show that listening condition is the factor that influenced LFM performance the most, closely followed by nonword repetition accuracy. Parental education level and language background also had a significant influence and backward digit span performance showed a clear trend to influence LFM performance. In the sequential bilingual sample, listening condition followed by nonword repetition accuracy and parental education level had a significant influence on LFM performance. Both backward digit span and duration of Swedish exposure were non-significant. There were no significant interaction effects between the included factors in either model.

Conclusions

The presence of background babble noise has a large influence on primary school children's narrative listening comprehension. In contradiction to our hypothesis, the magnitude of the negative effect of background babble noise did not depend on factors affecting linguistic proficiency (language background, SES, phonological short-term memory and complex working memory).

On the development of metalinguistic syntax intervention to improve sentence and reading comprehension in Danish Grade 5 students

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This study presents the basic ideas and piloting results behind a sentence level syntax intervention for middle school students with mild to severe language difficulties.

The intervention study is part of a larger research effort to understand to what extent children's reading comprehension depends on their syntactic comprehension proficiency, i.e. their skills in extracting literal sentence meaning from syntactic cues, especially word order in Danish. The final intervention study is intended to directly test the effects of syntax intervention on sentence and reading comprehension.

The intervention is based on the metalinguistic approach Shape Coding where syntactic information is made available for inspection through extensive visual coding of language structures with colors, arrows and geometrical shapes (Ebbels, 2007).

Shape coding was developed for children with developmental language disorder (DLD). Studies have shown that the system can improve the syntactic proficiency of these children (see Balthazar, Ebbels & Zwitserloodd, 2020). However, previous studies have focused on specific language outcomes, e.g. coordinating conjunctions (*neither nor*, *not only but also*) (Ebbels et al., 2014), they have been small-scale, and they have only involved participants with severe language disorder (e.g. Ebbels, van der Lely & Dockrell, 2007).

The intervention is intended for Grade 5 students with performance below the 25th percentile on tests of syntax and text comprehension are invited to participate. We expect that some participants will have a DLD whereas others will not meet ordinary criteria for having language or reading difficulties.

Rather than targeting specific syntactic outcomes, we will use the Shape Coding system to address general syntactic characteristics: 1) that phrases filling semantic roles can be both simple and complex, and 2) that word order varies according to construction type or speaker focus. In the presentation we will show examples of included sentences to illustrate why the awareness of these general syntactic characteristics could be important for children's sentence and text comprehension.

The intervention study will have implications for our understanding of individual differences in syntactic proficiency as a bottleneck in children's reading comprehension. It also has

practical implications by providing insights into the potential of using an explicit metalinguistic approach for teaching syntax to Grade 5 students.

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Infant-Directed Speech Does Not Always Involve Exaggerated Vowel Distinctions: Evidence From Danish

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A prominent hypothesis holds that parents may help infants learn language by modifying the acoustic properties of their infant-directed speech (IDS) (Kalashnikova & Burnham, 2018; Kuhl et al., 1997; Liu et al., 2003). The benefits of IDS to phonological development are generally attributed to its tendency to increase the clarity of the speech addressed to children (cf., Kuhl et al., 1997; Liu et al., 2003). For example, IDS has been shown to exhibit a higher degree of separability in its phonetic categories through vowel space expansion, which in turn, has been shown to correlate with language outcomes at a later point in development (Dilley et al., 2020; Hartman et al., 2017; Kalashnikova & Burnham, 2018; Liu et al., 2003).

The current study revolves around Danish, a language characterised by a high degree of phonetic reduction and a wide variety of vocalic sounds (cf., Basbøll, 2005; Trecca et al., 2021). The peculiar sound structure of Danish has led researchers to posit that Danish may be particularly difficult for infants to learn; that is, the sizeable vowel inventory and frequent reduction of obstruents to vocalic sounds in Danish may reduce the availability of processing cues (Bleses et al., 2008a, 2008b, 2011). If the acoustic properties of caregivers' IDS serve to clarify the linguistic input to Danish-learning infants, we may expect these properties to manifest themselves in a particularly strong manner in Danish (cf., Trecca et al., 2021).

We compare the acoustic properties of 26 Danish caregivers' spontaneous speech when interacting with their 11-24-month-old infants and an adult experimenter (i.e., adult-directed speech, ADS) on both prosodic and vocalic dimensions. The results indicate that Danish IDS conforms to general cross-linguistic patterns in its prosodic properties, with a higher overall pitch, a greater degree of pitch variability and a slower articulation rate (cf. Figure 1).
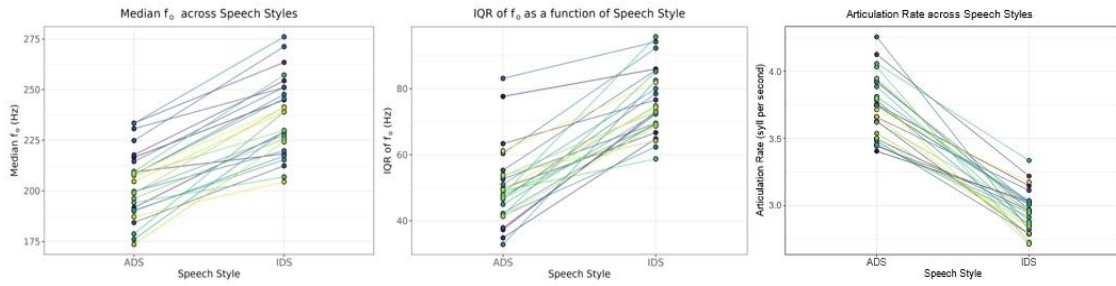
Figure 1: Panel of plots showing model estimates for each of the acoustic measures for each subject. The points for each subject are connected across two speech styles with a line

The acoustic properties of Danish vowels, however, contradict cross-linguistic tendencies: Danish caregivers produce IDS with similar vowel durations, a reduced or similar vowel space area and a higher degree of within-vowel variability (cf. Figure 2 below).
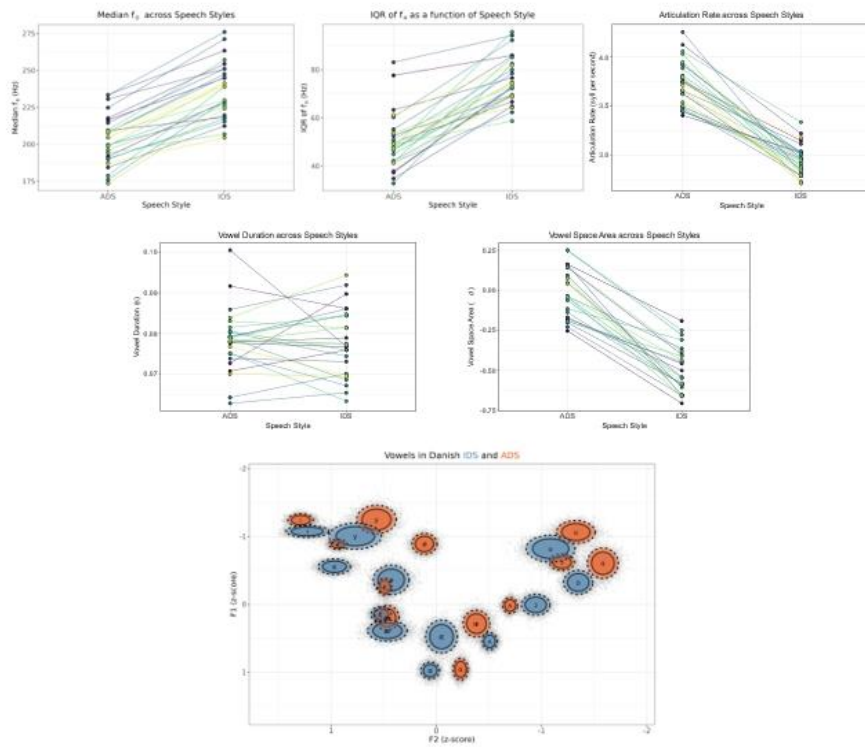

Figure 2: Panel of plots showing model estimates for the vocalic measures in Danish IDS and ADS. In the below plot, the dotted ellipsis encompasses 95% of the vowels while the innermost ellipsis surrounds 80% of the vowel distribution

We argue that these results provide little support for the hypothesis that caregivers help infants learn language by increasing the clarity of their speech. We use these results to reflect on the scientific study of IDS and highlight the need for theory-driven comparisons across a diverse intersection of languages and cultures (Christiansen et al., 2022; Deffner et al., 2021; Kidd & Garcia, 2022).

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Let's think of that elephant: the dead-end of the "cognitive unconscious" in language and (political) communication

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George Lakoff's world-renowned works on political communication advocate a neural account of the *political mind* (Lakoff 2004, 2008). Taken for granted the neural evidence of frames, and the ubiquity of unconscious cognitive processes, this approach ends up being a dead-end, reducing communication to a trivial brain-bound mechanism. Accordingly, individuals once again become Cartesian *automata* brainwashed by a media system whose main function is framing, and eventually reframing, their brains/minds.

Yet, the political arena is a potent example of the social essence of semiotic activities, which cannot emerge but from "users" in flesh and blood, given their *disposition* to constantly (re)negotiate sign meanings (De Mauro 1982). Hence, a neural theory of semiotic/semantic processes results both obsolete, evoking an old propaganda's theory of behaviorist taste, and inconsistent with the current neuroscientific outcomes.

Halfway between psychoanalysis and neuroscience, investigations show that complex cognitive processing *may* occur at the unconscious level. However, neuroscience itself is only now beginning to understand how this occurs on the neural level, suggesting that (1) a clarification of the controversial notion of "cognitive unconscious" would require an account of the neural mechanisms underlying both conscious and unconscious thought, and their dynamic interaction (Berlin 2011); (2) certain types of information processing, especially those involving symbol manipulation, seem to take place exclusively in conscious thought; specifically, being a normative system which embroils the individual as well as the collective mind, language requires some sort of access to consciousness (Zlatev, 2011); (3) there are different kinds of unconsciousness, and different degrees of consciousness.

Along these lines, my contribution aims at scrutinizing the interplay of unconscious and conscious processes underlying semiotic activities, believing that a clear-headed account of communication should "get out of the brain" to embrace a semiotic-phenomenological perspective (Sonesson 2015; Zlatev & Blomberg 2019). Re-elaborating Saussure's conception of *linguistic sentiment*, which already related linguistic activity to both unconscious and conscious procedures (Siouffi 2021), I will discuss the challenging hypothesis of a *collective cognitive unconscious* in order to give reasons of the *intuitive clarity* of that *semantic core* without which no meaningful utterance is possible (Smirnov 2017). Here "unconscious" brings into play a normative system which provides for the meaningfulness of the human Lifeworld. Such a hypothesis, given a preliminary distinction between *introspection* and *intuition*, appears consistent with Merleau-Ponty's *sedimented practical schema* of subjective

being in the world (Kozyreva 2016), opening a fruitful pathway to achieve a matter-of-fact clarification of semiotic practices.

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When are facial gestures in a signed language linguistic?

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Signers of Danish Sign Language (DTS) use two clearly identifiable, nonmanual signals involving muscles around the mouth. For *g-a* (*guarded assessment*) signers typically raise their chins, the corners of the mouth appear to be lowered, and the lips may protrude. In *n-c* (*nose consent*) the muscles of the cheek and on the side of the nose contract and raise the upper lip, the brows may be lowered. The two signals have different distributions, but also overlap distributionally. Both can be used in responses with and without a manual sign. Grammatical nonmanual signals in signed languages are described as co-extensive with the manual signals in their semantic scope (Baker-Shenk & Cokely 1980). However, *n-c* is brief and cannot be extended, whereas *g-a* can be extended in time, and although it has a clear start, it may linger after the signer has finished the signs in its scope. *N-c* appears to be a nonmanual equivalent of the manual sign YES used for consent and to be an areal feature of Northern European signed languages. *G-a* signals skepticism, but can be used with the gesture *palm-up* (Müller 2004) as a tag to encourage agreement from one's conversation partner (cf. tags like English *isn't it*).

The muscles involved in making *g-a* and *n-c* are used in non-linguistic facial expressions signaling disgust and anger (Ekman & Friesen 2003), i.e., negative feelings. Comparing human and chimpanzee facial expressions, Vick et al. describe Chin Raiser as the pushing of "the chin and lower lip upwards, often causing it to protrude... As the center of the lips is pushed upwards, the mouth corners appear to be pulled downwards" (2007: 12). In chimpanzees, this particular signal typically occurs in pouts in "contexts of embraces, invitations, play, approaches, and in response to aggression... Therefore, pouts may represent a need for contact, or reassurance, and physical affinity" (Parr et al. 2007: 177).
In my presentation, I will discuss the signals' possible origins, linguistic status, and routes into DTS (Wilcox 2004) and their status in relation to Crasborn et al.'s (2008) classification of mouth actions in signed languages.

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Do we notice our own mistakes? Attention to misspellings and convention-breaking grammar during reading

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"Is some grammar errors or mispellings more disturbing than others and why?" Typos, misspellings and anomalous grammar are common phenomena – both in texts written by native and non-native speakers. The language of native speakers is often idealized within second language learning theories (Bokamba 1984), but native speakers also break grammar and spelling conventions (Blom et al. 2017). While some anomalies occur both in texts written by native speakers and by L2 learners, other anomalies are only characteristic for one of the two groups (Hansen et al. 2019; Søby & Kristensen 2019). Our corpus of L1 high school essays shows that the frequency of anomalies follows the pattern orthographic > morphological > syntactic. In L2 users with English as L1, the order is morphological > orthographic > syntactic. Within these three major categories there are also different patterns for L1 and L2 texts.

In a proofreading study, we investigated if native speakers are better at noticing anomalies that are common in L2 production than those that are common in L1 production (and which they potentially produce themselves).

211 Danish high school students (98 women; 17-20 years, M = 18.31 years, SD = 0.67 years) 1) read two texts for comprehension, while underlining misspellings and grammar anomalies and 2) did a basic grammar quiz. The texts contained syntactic (V2 word order), morphological (gender congruency in noun phrases; verbal inflection) and mixed orthographic anomalies. Some anomalies were typical of L1 usage (e.g. use of infinitive for present tense when the two forms are homophone), while others were typical of L2 usage (e.g. use of present tense verb form for the infinitive).

The anomaly detection rate was analyzed using a mixed effects model. In line with L1 production patterns, we found the following detection pattern syntactic > morphological > orthographic, i.e. readers tend to overlook common L1 anomalies. Detailed analysis of gender congruency and verbal inflection pattern also show a match between perception and production patterns, e.g. lower detection rates when an infinitive is used for a homophone present tense (a common L1 mistake). We discuss the degree to which our results show a link between production and perception of grammar.

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Prosody in Swedish and Danish as second languages

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Prosody is important for speech processing, maybe particularly so in the Scandinavian languages where word tones and voice quality play an important role in differentiating words and cueing suffixes. In Danish, for instance, a creaky voice on a word stem (‿) can differentiate a thought from a petrol station (tanke-n, /tsaŋk.ən/, 'the thought' vs tank-en, /tsaŋk.ən/, 'the petrol station') but it can also cue grammar and prepare the listener, for example, for a plural or singular suffix (pil-e, /pʰiːl.ə/, 'arrows' vs pil-en, / pʰiːl.n/, 'the arrow'). In Swedish and Norwegian, the same contrasts are expressed with tones. This systematic interaction between prosody and inflections allows for facilitated speech processing in the Scandinavian languages (Clausen & Kristensen, 2015; Roll et al., 2017). We propose, however, that the facilitative function of prosody is only available to native speakers and second language learners at high proficiency levels and we, therefore, investigate whether training could benefit L2 learners at earlier stages.

In neurophysiological and behavioural studies, we compared second language learners' awareness of and responses to L2 prosody to those of native speakers of Danish and Swedish. Specifically, we presented inflected words where the prosody either correctly or incorrectly predicted upcoming suffixes and asked participants to make grammatical decisions based on the suffix. We also presented minimal pairs, only distinguished by prosody, and asked participants to indicate the correct word. Our results indicate that native speakers easily distinguish minimal pairs and were disrupted in their suffix processing when the prosody was mismatching. Second language learners were not affected by mismatched prosody and could not distinguish minimal pairs based on an unfamiliar prosodic feature. A specifically devised training paradigm, however, has provided promising results for improved processing of L2 prosody. Thus, beginner learners' distinction of minimal pairs quickly improved and we observed facilitated processing after training, i.e., anterior negativities indicative of grammar processing. We also observed more native-like processing if L2 prosody was similar to L1 prosody.

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What is *knowledge* in primary education? Metaphorical conceptualizations of *knowledge* in Finnish, Finland-Swedish and Swedish curricula

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Recently, there has been vivid media debate in the Nordic countries on the contents, goals and teaching methods of primary education. Concern has been expressed, for example, about the sinking results of international tests like PISA, increasing problems regarding "school discipline", and conflicting views among scholars and politicians about what pupils need to learn. In Sweden, Finland is regarded as a role model because of its PISA results, whereas in Finland various educational innovations have traditionally been modelled after Sweden. Sweden and Finland are neighboring countries with a partly shared history, similar cultures, and languages that are totally unrelated. Moreover, Finland has a large Swedish-speaking minority, whose variety, Finland-Swedish, is somewhat distinct from the variety spoken in Sweden. This cultural and linguistic context offers an interesting framework to study metaphorical differences between languages and how they conceptualize the world.

The aim of this study is to analyze the meanings and metaphorical conceptualizations of the educational concept *knowledge* in Swedish, Finnish, and Finland-Swedish. The material consists of the primary school curricula that are used in Sweden and Finland, including the Finland-Swedish translation of the Finnish curriculum. The analysis is based on the conceptual metaphor theory deriving from Lakoff and Johnson (1980), and the concrete perspective derives from studies that concentrate on education-related metaphors and how they conceptualize education with respect to, for example, different socio-cultural values (Goatly 2002; Berendt 2008; Wade 2017). To identify possible metaphors, we use MIPVU (Steen et al. 2010).

The results show that knowledge is conceptualized through various image schemas and other conceptual metaphors in Finnish, Finland-Swedish and Swedish, such as CONTAINER (*to have knowledge*), SOURCE-PATH-GOAL (*to get knowledge*, *source of knowledge*), CULTIVATION (*to gain knowledge*), and BUILDING (*knowledge as foundation*, *to build knowledge*). However, the frequencies of these conceptual metaphors differ between the languages. For example, the BUILDING metaphor is more common in the Finnish curriculum than in the Swedish one. Also, different perspectives on knowledge have been noted. While knowledge in the Finnish curriculum is described as subordinate to *bildung*, knowledge in the Swedish curriculum is described as a superordinate concept that includes knowledge of facts, understanding etc.

During our talk we will go into more detail regarding the linguistics and metaphorical conceptualizations of *knowledge* in Finnish, Finland-Swedish, and Swedish, while discussing

possible connections between our findings and the ongoing media comparisons between the Finnish and Swedish school systems mentioned above.

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When Heavy Rain is Frying Bacon: Metaphor and Foley Art

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Lakoff and Johnson early on claimed that 'metaphor is primarily a matter of thought and action, and only derivatively a matter of language' (153). Since then, studies have shown that metaphors are reflected in many different modalities and representations (i.e., pictures and multimodal representations (Forceville), art objects (Kennedy), gestures (Cienki and Muller), dance and other expressive acts (Okonski et al.), and music (Zbikowski)).

This paper deals with an analysis of the metaphors reflected in Foley aesthetics and performance. Our aim is to present observations on the use of metaphor in Foley art. Although among a set of signifying systems sound has received "[s]urprisingly little" attention (Turner 66), the recent turn to alternative to the visual orientation in Western culture (Pinch and Bijsterveld 11) elicits the questions of film sound design in the process of human perception and knowledge production. Specifically, film sound can trigger a network of bodily and cognitive associations expressed and interpreted in terms of metaphor (Fahlenbrach; Görne). Foley sounds that require a unique performative technique using various objects and devices for film sound design go beyond the cinema in their aesthetic and creative possibilities and production methods.

The present study undertakes the challenge to apply Conceptual Metaphor Theory (CMT) to Foley aesthetics and performance (Lakoff and Johnson). It is based on an examination of contemporary handbooks on motion picture sounds and open access publications, manuals and databases on Foley art technique. We start by reviewing Foley sounds production as a stylistic activity that alters the texture of ordinary sounds (e.g., Keenan and Pauletto; Wright) for emotional effect. The specialized design of perceived Foley sound reveals its metaphorical qualities to the audience through cross-modal correspondences of perception (Görne). Next, we proceed to the underworld of Foley art, and namely to examining the technique and production of Foley sounds that are hidden from the audience. By investigating the roots of Foley art in the affordances of objects (Gibson), embodied knowledge, based on practice (Pauletto 343) and an inherent set of correspondences between the sounding objects, we propose that Foley sounds offer a manifestation at the level of "lexico-encyclopedic conceptual [LEC] metaphors" (Johansson Falck). We conclude by discussing the potential of Foley art to be recognized and analyzed as metaphorical, i.e., as the phenomenon whereby we sound something in terms of something else, as well as the underlying assumptions and challenges to what it takes to be a metaphor.

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The Role of Construal in the Semantic Mapping of German prepositions

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A preposition's semantic value is fundamentally derived from our conceptualization of the spatial-physical world and mediated by how we interact with objects in our environment. This talk aims to present the results of a study that examined the relationship between our construal of a given scene and prepositional meaning in spatial particles. These construal patterns include aspects associated with the configuration between two objects, the 34rajectory and landmark, pertaining to the figure-ground alignment, the level of specificity with which certain elements are portrayed, the perspective and viewpoint that is imposed on a scene and thus allows to locate elements relative to, e.g., the front-back axis, as well as the degree of subjectivity, which relates to how absorbed the conceptualizer is in the process of conceptualization. To demonstrate the significance of construal to the understanding of the polysemous nature of spatial prepositions, an analysis of two German prepositions *jenseits* ('beyond') and *hinter* ('behind') was carried out.

The (re-)einterpretation of *jenseits* and *hinter* is supported by empirical examples extracted from the DWDS sub-corpus *Die Zeit*, a German national weekly newspaper. A sample of 2000 instances of the prepositional use of *jenseits* and *hinter* was collected and then classified semantically into categories based on the construal mechanisms and the 34rajectory-landmark relationship these instances encode. The analysis shows that a high frequency of the occurrences found in the sample constitute non-spatial meanings of *jenseits* and *hinter* and thus encode a 34rajectory-landmark configuration in more abstract domains such as TIME, PATH and, CONTAINMENT. Lastly, it is shown that these meaning extensions arise due to the changes in the construal of a scene through metaphorical mappings.

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The effect of type and frequency of morphosyntactic alternations on speakers' preferential choices and ratings

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The paper focuses on the linguistic knowledge of alternating morphosyntactic constructions as attested in native speakers' preferential choices and ratings. It contributes to the growing body of research that suggests the importance of alternation studies for the empirical foundation of usage-based construction grammar (e.g. Bresnan 2007; Cappelle 2006; Divjak et al. 2016; Gries & Stefanowitsch 2004; Klavan & Divjak 2016; Perek 2012; Szmrecsanyi et al. 2016; Van de Velde 2014). The alternating constructions of interest are three morphosyntactic alternations in Estonian – between the exterior locative cases allative, adessive and ablative and the corresponding postpositions peale 'onto', peal 'on' and pealt 'off' (examples 1 – 3).

(1) LATIVE

Paneb	raamatu	{lauale	/	laua	peale. }
Put-PRS.3SG	book.SG.GEN	table.SG.ALL		table.SG.GEN	onto

"He/She puts the book on(to) the table."

(2) LOCATIVE

Raamat	on	{laual	/	laua	peal. }
book.sg.nom	be-prs.3sg	table.sg.ade		table.sg.gen	on

"The book is on the table."

(3) SEPARATIVE

Võtab	raamatu	{laualt	/	laua pealt. }	
take-PRS.3SG	book.SG.GEN	table.SG.ABL		table.SG.GEN	from on

"He/She takes the book from the table."

The overall frequencies of the alternating constructions are very different. Case constructions are almost 100 times more frequent than the corresponding postpositional constructions. It is predicted that the strength of different factors on speakers' choices will vary by the types and frequencies of constructions. It is predicted that the direction of the effects is the same, but the three alternations exhibit different constraints on their use. The corpus data used in the study constitutes a sample of 3,000 sentences (500 per construction) from the Estonian National Corpus (ENC 2017; 1,3 billion words). Experimental data comprises a forced choice (75 participants) and an acceptability rating task (105 participants).

Mixed-effects logistic regression analysis shows that although the direction of the effects for the predictors is the same across three alternations, the ranking and selection of predictors is different. For lative and locative, length, mobility and syntactic function of Landmark phrase

are the strongest predictors. For separative, mobility and complexity are the strongest predictors followed by position and length. It seems that the more frequent the construction, the less constraints we have. This result is, by and large, confirmed by native speaker behaviour as attested in two experiments.

The paper shows that the grammatical knowledge of Estonian exterior locative constructions is probabilistic and regulated by the predictors in a relatively uniform way: the postpositional constructions are preferred with short, mobile entities functioning as adverbials; the case constructions are preferred with longer, static entities functioning as modifiers. What differs is the ranking and selection of predictors across the different alternations. The results of the paper have wider theoretical implications for the empirical foundations of alternation studies. Native speaker behaviour as attested in corpora and linguistic experiments indicates that there are differences in the linguistic knowledge of alternating morphosyntactic constructions.

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On embodied polysemiotic communication: language, gesture and body

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1. Language and polysemiotic communication

Cognitive semiotics explores the notion of polysemiotic communication understood as intertwined use of two or more semiotic systems. Language - in its various forms - can be treated as a paradygmatic example of a semiotic system (Zlatev et al. 2020). However, human everyday communication involves more than just language. In actual communicative situations, language is a component of more complex polysemiotic system, where speech is integrated with a number of other bodily activities including body posture, head movements, face expressions, gaze and manual gestures of a kind. These extra-linguistic semiotic resources gain their importance in the context of "embodied turn" in studies on cognition and communication.

2. Embodiment

In my presentation, I focus on the phenomenon of co-expression of speech and two other bodily activities. The first one is called spontaneous gesticulation (McNeilll 1992) or singular gestures (Müller, 2018), i.e. gestures that are spontaneously created, that are global-synthetic, holistic (McNeilll 1992) which are not explicitly planned or monitored. There are situations (stuttering, memory losses, blindness) which suggest deep interdependence between speech and gesticulation. The second semiotic resource to be discussed is the phenomenon of extended body posture and bodily movement (Mondada 2016). In this case, entire "walking bodies" and speech are coordinated and interdependent as elements of one action. As I argue, in both cases integration of speech and these activities can be observed. In other words, I claim that language together with these two semiotic resources constitute one, broader polysemiotic system of communication. I will supplement the above findings with my own study on meaning-making activities during educational (teaching-learning) interactions.

3. Phenomenology

It is not a coincidence that spontaneous gesturing, bodily movements are synchronous and co-expressive with speech. An account of integration of language (speech) and embodied activities can be found in phenomenology, especially within Merleau-Ponty's (1962) philosophy of embodiment. In this view, our various activities (including verbal and manual ones) are different facets of the same activity: of the whole organism in its environment. In particular, co-expression of speech and gestures are seen as co-emergence of two aspects of the same phenomenon: immersion of an embodied subject in intersubjective and meaningful world. In this context, subjects experience various forms of expressing (gesturing, speech) as activity of one body.

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Consciousness in language - confronting Chalmer's challenge empirically in linguistics

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Since David Chalmers (1995) pointed out the hard problem of consciousness, the number of papers mentioning consciousness in relation to language decreased. The problem of subjective experience and awareness did not seem to have a solution. While consciousness is now rarely mentioned in linguistic literature the different aspects of consciousness have not disappeared from linguistic or cognitive theory. Awareness, intention, knowing etc. are fundamental. These concepts are also incorporated in an array of empirical studies on language processing or mental representations of language (e.g., Gonzales-Marques 2007). Can consciousness be studied in experimental settings through observational terms, indirect observables, and constructs? The aspect of subjectivity seems to be lost in the scientific process as Chalmers suggests. Subjective experience cannot be a collective third person perspective i.e., scientific knowledge. However, there are other aspects of consciousness that might to be available for an empirical approach.

Consciousness is a polysemous concept. Not only has different schools of thought given it differing meanings, but the term is also used to signify a set of different mental functions or states of mind as for example wakefulness, state of being responsive, perception of something, knowledge of something, cognizant, meta-awareness, sensible and so on. Most set members of the concept of consciousness have linguistic correlates that can be empirically studied. For example, meta-awareness in second language learning or eye-tracking involuntary vs. voluntary linguistic processing. The constructs that are measured in empirical research designs never tell us the whole story about consciousness, but they do touch important aspects of it.

The tension between subjectivity and objectivity in scientific research remains to be solved. This is a problem for the philosophy of science to answer. In linguistics standard empirical methodology can and should be used when studying the different aspects of consciousness in language. Conceptual analysis leading to a measurable construct with direct or indirect observables constitute the basis of an empirical research design.

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This crap or that crap? What demonstrative choice reveals about the depressive self

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Background: Spatial demonstratives are highly frequent linguistic universals (Levinson, 2018; Diessel, 1999), with at least two contrastive expressions ("this" vs. "that") indicating physical, emotional, or functional proximity of the speaker to the referent (Kemmerer, 1999). Recent evidence indicates that even in the absence of a communicative context, demonstrative choices are highly consistent across individuals, suggesting that demonstratives in such cases reflect experienced or emotional proximity to the self in a mental space (Rocca et al., 2019). Further, these representations appear to be related to the semantic features of the referent, such as valence and manipulability (Rocca et al., 2019). Depression is a disorder consistently characterized by a maladaptive focus on the self, manifest in language-use such as increased use of first-person pronouns (Holtzman, 2017). Further, neural evidence has suggested impaired self-referent emotional processing (Miskowiak et al., 2018) as well as altered processing of emotional valence stimuli (Groenewald et al., 2013). The current project aimed to extend previous findings on demonstrative choice, and address whether individuals with depression can be detected from demonstrative choice behavior along specific semantic dimensions.

Methods: 775 adult native English speakers completed a 290-nouns Demonstrative Choice Task (Rocca & Wallentin 2020), in which they were presented with one noun at a time and were to match it with either "this" or "that". Depression was defined as a sum score above 10 on the 9-item Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001). PCA was performed on the 290 response items. 100 logistic regression models were trained with repeated k-fold cross-validation, predicting PHQ-9 class (healthy vs. depressed) from 1-100 of the PCs. All models were evaluated on a hold-out test set (30% of the data).

Results: The best model exhibited an out-of-sample classification accuracy of 0.65 (p<0.001), with an F1-score of 0.65. The nouns with strongest negative effect (indicating that depressed individuals chose "this" more often than healthy individuals) included: *crap*, *burden*, *poverty*, *distraction*, *avoidance*, *complaint*, *darkness*, *excuse*, *perjury*, and *woe*. The nouns with strongest positive effect (indicating that healthy individuals chose "this" more often than depressed individuals) included: *faith*, *wealth*, *meeting*, *sense*, *use*, *carriage*, *package*, *belief*, *beer* and *motive*.

Conclusion: Individuals with depression could be classified from demonstrative choices with an accuracy of 65%. Further, depressed individuals were more likely to use a proximal demonstrative for highly negatively valanced nouns than healthy individuals, while healthy individuals were more likely to use proximal demonstratives for positively valanced nouns and nouns related to social interaction. These findings indicate that demonstrative choices may capture important aspects of self-representation related to depressive mental states and could possibly serve as non-reflective markers of depression.

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Constructing a cross-linguistic lexical comprehension task in Mandarin

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Many countries enjoy long histories of bi- or multilingualism; while many traditionally monolingual countries like the US are experiencing increasing bilingualism due to immigration (August & Shanahan, 2006). However, most of the lexical assessments were developed for monolinguals, which have been shown to be inaccurate to assess bilinguals.

The most common measure of preschoolers' vocabulary size is parent report such as MB CD-I and MB CDI-II (Fenson et al, 1993a, 1993b), available in 61 languages (Dale & Penfold, 2011). However, it is an indirect measure and not objective (Caselli, et, al, 1995). The other format is picture vocabulary test with Peabody Picture Vocabulary Test (Dunn & Dunn, 1981) used most widely, translated into Chinese (Lu & Liu, 1998). However, the translated version has underestimated the vocabulary size of Mandarin speakers (Kuo & Yu, 2014). The current Mandarin vocabulary tests were either translated from English (i.e. Peabody Picture Vocabulary Test (Lu & Liu, 1998), or followed different procedures from tests in other languages (i.e., Chinese Vocabulary Test (Kuo & Yu, 2014) which cannot be used to test bilinguals or for cross-linguistic study. In this study, I constructed an international and standardized picture vocabulary comprehension task in Mandarin for preschoolers. The design of the task followed the procedures of cross-linguistic lexical tasks in 32 languages (Haman, Łuniewska, and Pomiechowska, 2015) and computerized on a tablet.

First twenty Mandarin-speaking adults named 300 pictures and we selected those with high agreement as candidate words for the lexical task. Then, another 43 Mandarin-speaking adults participated in the rating of age of acquisition of those words. Moreover, the phonological and morphological complexity was calculated. The noun and verb task each consists of two training trails and 30 trails with comparable level of difficulty in terms of age of acquisition and complexity. The instructions were recorded in Mandarin with automatic scoring and reaction time measure. The expert validity was attained by consulting a speech pathologist and an early childhood educator. The task was given to 500 Mandarin-speaking children aged 2-6 in Taiwan, 100 for each age group. The scores increase with age. The concurrent validity was established with Peabody Picture Vocabulary Test with correlation 77.

This Mandarin picture vocabulary measure could provide an assessment tool for preschooler's vocabulary development in Mandarin monolinguals or bilinguals for diagnosis of language delay or language disorder. It will also make a valuable tool for cross-linguistic research in language acquisition.

A proposal for a new model of understanding and analysing textual cohesion

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Halliday & Hasan (1976) were among the first to study the phenomenon of cohesion, and their work has had a seminal influence within text linguistics (Renkema & Schubert 2018: 126), serving as a basis for later models, such as the one found in Tanskanen (2006). However, there are fundamental problems with the way Halliday & Hasan (1976), and hence existing models, view textual cohesion. They treat meaning mostly as residing in texts and individual words rather than as created in the mind of the addressee on the basis of active interpretation of textual input. Furthermore, they rely too much on formal aspects and semantic relations between word stems and too little on the contextual reference of phrases. The flaws in the existing models become evident when one tries to employ them in analyses of authentic texts. Even Halliday & Hasan's (1976: 2) initial and seemingly very basic example of cohesion in the form of full coreference, Wash and core six cooking apples. Put them in a fireproof dish, where the pronoun them is claimed to refer anaphorically to six cooking apples, is debatable, according to Brown & Yule (1983: 202), as them actually does not refer to the apples in their original state, but to their cored form.

The paper proposes an entirely new model of cohesion and a new method of cohesion analysis based on relations between the referents of phrases rather than on formal or semantic properties of textual constituents. The purpose of the work has been to try to find a solution to the challenges associated with denotation and reference in the analysis of cohesion. The proposed new model is based on insights from Wilson & Sperber's (2006) Relevance Theory and from Cognitive Linguistics, such as Langacker's (2008) work on nominal grounding elements, and Fauconnier's (2010) work on Mental Spaces.

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A Cognitive Semiotics approach to universals

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The study of the relationship between material culture and language has a long tradition, from the studies of cultural evolution to the findings of the cognitive sciences. The recent conclusions of these studies in relation to the universals of language tend towards linguistic diversity and evolutionary linguistics, neglecting the role of universals. This article explores the role of artifacts in the constitution of universal patterns, proposing that within the evident cultural diversity –and language diversity–, it is still valid to consider universals without contradicting the new paradigms of cognitive semiotics. This idea is supported by the thesis of a relational ontology between artifacts and language.

In the field of research on human communication systems, Coseriu (1977) proposes the distinction between universals of language and universals of linguistics. The latter refer to linguistic theory: a body of systematized knowledge useful for studying the diversity of language from the perspective of methodologies and principles. It is the level of linguistics as a science (Coseriu 1977:328) and of linguistic epistemology, establishing general notions and methods of universal application. Instead, language universals refer to "properties of language itself" (ibid.:328). The analogies and structural similarities in phonemes, grammatical categories or types of sentences between different languages are good examples of this. On the other hand, for Evans and Levinson (2009), the universals of language are nothing more than a myth. These authors, with a cognitive approach, question the existence of generally accepted universals such as phrases, lexical categories, structure rules or verbal affixes. To do this, they expose multiple examples of languages showing cases in which said universals are not fulfilled. His alternative proposes the diversity of language as the norm, being the only crucial factor for understanding the nature of language and its role in human cognition (Evans and Levinson 2009:431). Comparing Evans and Levinson's approach with Coseriu's proposal, the former omit the distinction between linguistic universals and language universals. It is not clear if it is a deliberate omission or simple ignorance of the Romanian's work. Instead, it should be noted that universals understood as scientific methodologies, in principle, would not be affected by the criticisms of Evans and Levinson. As Robert Freidin states, 'It is not possible to disprove the hypotheses of universals only from specific examples' (Freidin 2009:454). In the following lines I propose a balance between these two approaches, through the proposal of a relational ontology between artifacts and language that, from cognitive semiotics, insists on the possibility of universals both in the artificial world and in the world of ideas.

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How much do we really care? Pre-verbal and verbal investment in choices concerning faces and figures

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Every day we make choices, but our degree of investment in them differs, both in terms of pre-verbal experience and verbal reasoning. In an earlier experimental study, participants were asked to pick the more attractive one among two human faces, and among two abstract figures, and later to provide verbal motivations for these choices. They did not know that in some of the cases their choices were manipulated (i.e., they were asked to motivate the item they had not chosen). Against claims about our unreliability as conscious agents (Nisbett and Wilson, 1977; Johansson et al., 2005), the study found that in about half the cases the manipulations were detected. In the present study, we investigated whether varying degrees of choice investment could be an explanatory factor for such findings. We analysed the verbal justifications of the participants along a set of semantic categories, based on theoretical ideas from phenomenology and cognitive linguistics, and formulated a matrix of eleven markers of choice investment. We predicted a greater degree of investment when motivating (a) choices of faces than figures, (b) manipulated than actual choices, and (c) detected than non-detected manipulations. These predictions were confirmed, but with various strength. This allows us to argue for both consilience and differences between pre-verbal choice investment and the corresponding verbal motivations of the choices made.

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'Stay focused!': The role of inner speech in maintaining attention during a boring task

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Is inner speech involved in sustaining attention, and is this reflected in response times for stimulus detection? In Experiment 1, we measured response times for infrequently occurring stimulus (a black dot occurring at 1–3-minute intervals) and subsequently asked participants to report on the character of inner experience at the time the stimulus appeared. Our main preregistered hypothesis was that there would be an interaction between inner speech and task relevance of thought with reaction times being the fastest on prompts preceded by task-relevant inner speech. This would indicate that participants used their inner voice for attentional control. Participants reported to be engaged in inner speech on approximately one third of all trials. With generalized linear mixed-effects models fitted to a Gamma distribution, we found significant effects of task relevance but no interaction with inner speech. However, using a hierarchical Bayesian analysis method, we found that trials preceded by task-relevant inner speech additionally displayed lower standard deviation and lower mode compared to all other trials. Due to deviations from the preregistered sampling and analysis procedures, we replicated our findings in Experiment 2. Our results add support to the hypothesis that inner speech serves a functional role in top-down attentional control.

Physical and social events in narratives by children with typical development, autism and language disorder

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Taking narratives as a linguistic reflection of parts of mental organisation, this study investigates how 10-to-14-year-old Danish-speaking children with typical development (TD; n = 30), autism spectrum disorders (ASD; n = 27) and developmental language disorders (DLD; n = 12) report events in two short animated videos, both of which consist of simple geometrical figures moving around. One of the videos is designed to elicit descriptions of physical events, e.g. 'orbiting' and 'rotating' (Klin & Jones 2006), the other is designed to elicit descriptions of social events, e.g. 'fighting' and 'chasing' (Heider & Simmel 1944). All of the children are matched on age, IQ and memory, and the TD and ASD children also on vocabulary and grammar comprehension.

First, we examined how likely the children are at attributing intentionality to the geometrical figures in the videos, e.g. do they describe them as bumping around or as fighting? Previous studies show divergent results (e.g. Bowler & Thommen 2000, Castelli et al. 2002, White et al. 2011), probably in part because their linguistic data are coded according to somewhat impressionistic rather than exact semantic criteria. We argue that a systematic semantic analysis of predicates is a more reliable measure of linguistic attribution of intentionality. Our comparison of children with TD and ASD shows that there is no difference in how likely they are at attributing intentionality linguistically in either task.

Second, we compared the stories in the three groups of children in terms of how much relevant information they include. We rated the children's narratives on an index based on adults' stories about the same videos. Preliminary analyses suggest that there are significant differences between the groups on both narrative tasks. Specifically, TD children appear to include more relevant events than the two diagnostic groups, no matter whether the story highlights social or physical relations between 'characters'. Taken together with the findings on intentionality, it appears that the more idiosyncratic narratives by the children with ASD are not due to difficulties with detecting intentionality. Further analyses will be made to see whether language difficulties, social difficulties, or difficulties with integrating information may explain the different relevance ratings of the children's narratives.

We believe that this study through the use of precise semantic analysis and methodological triangulation brings us a small but important step closer to unravel some of the complexity of the difficulties that children with ASD or DLD experience.

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Pathos in the Estonian and Finnish Government programs

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In our paper, we will discuss the language use in the government programs in Estonia and Finland (in Estonia: "Governance Actions Program" and in Finland "Government Programme"). In Finland, all the government programs can be found on the government website (https://vnk.fi/) and in Estonia they are published on the Estonian government website (https://www.valitsus.ee/).

Government program text have several functions: it is (i) a *strategy* that defines and motivates the goals of the government and the means achieving these goals, (ii) an *agreement* between the political parties in the government coalition, and (iii) *information* to the parliament and the citizens of the plans of the government.

We will focus on the third function, as it is crucial to open decision making, and concentrate on the programs of the current governments: Sanna Marin's government in Finland (10 December 2019) and Kaja Kallas' government in Estonia (25 January 2021).

As strategy texts, government programs are supposed to describe the *current situation*, i.e., the starting point when the government starts its work, the *goals* that the government is aiming at, and the *means* that the government will use for achieving its goals. Basically, that is all there should be. Yet, the texts often include confusing parts whose only function is to appeal to the readers' emotions. We call those parts in classical rhetorical terms *pathos*. E.g., in the Finnish Government Programme, the introduction ends with the following appeal:

> "*Being in the middle of changes is not always easy, and we know that we will also face difficulties. We can succeed when we all take part in the transformation and in meeting the objectives.*"

In the introduction of the Estonian Governance Program and Governance Agreement, pathos is baked in the description of the current situation:

> "*COVID-19 is not the only thing that has had a devastating effect on people's well-being. We have also had to fight the global pandemic of evil that, even before the coronavirus, had begun to weaken the sense of unity and cooperation between and within nations. Without teamwork, there will soon be no more work. If there is no work to bring bread to the table, the lives of people will no longer be worthwhile.*"

We will discuss the government programs in general and focus on pathos.

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On agentivity in political motion metaphors

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The language of politics makes regular use of motion metaphors. This has been shown by discursive and corpus approaches to conceptual metaphor (e.g. Musolff 2004, Semino 2008), but such studies often focus on non-schematic elements of journey metaphor, such as MODE OF TRAVEL or CROSSROAD. The intricate mechanism of mappings involving the MOTION domain, as well as Force Dynamics (Talmy 2000) aspect of it, are thus left largely unexamined. My study focuses on how political speakers assign agentivity by utilizing general motion metaphors, such as "Sweden is going in the wrong direction" (Ulf Kristersson, the Moderate Party, 2020) and "we need to take the Swedish countryside forward" (Annie Lööf, the Centre Party, 2021). Metaphorical motion is analyzed by adapting the analytical model for cross-linguistic examination of non-figurative motion, developed within Holistic Spatial Semantics (Zlatev et al. 2010). I argue that this approach is particularly suitable for showing the inner workings and rhetorical effects of abstract motion observed in the compiled corpus of Swedish political speeches. Firstly, HSS-approach is highly precise when it comes to numerous semantic components expressing motion. Secondly, its view of meaning as being distributed across the whole utterance (Naidu et al. 2018: 9) is particularly suitable for analyzing the argumentative role of metaphor. In other words, HSS does not regard any component as central to the meaning construction and allows one to incorporate situational context and pragmatic knowledge into the analysis.

By classifying different types of metaphorical motion and by comparing them, this study shows that certain lexicogrammatical constructions expressing motion are preferred and formulaically used by politicians. The analysis of semantic roles of participants in figurative motion situations reveals how complex political processes are conceptualized as forces causing and/or controlling the figurative change of location. Abstract notions such as "the Swedish society" and "our land" are systematically framed in two opposite ways depending on the speaker's rhetorical strategy - either as an active entity propelling its own motion or as a passive entity set in motion by an Agent or an Instrument. These conclusions contribute to a more nuanced understanding of motion metaphors in political argumentation, both as an entrenched conceptual structure in its own right but also as building material for creative metaphorical extensions.

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Vague quantifiers in Estonian: evidence from a picture choice task

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Vague quantifiers, such as *few*, *some*, *most*, are words that refer to an underspecified amount of things. They do not directly map onto an exact numeric system, but are rather argued to map onto a separate, approximate numeric system (Coventry et al., 2010). The mapping can be influenced by a number of different factors, such as linguistic frequency of the expression (Newstead & Collis, 1987), the spatial arrangement of the objects in relation to background objects (Coventry et al., 2010; Newstead & Coventry, 2000), and the number of objects vs. the number of background objects (Coventry et al., 2005).

In this paper, we report results from an experiment with two Estonian quantifiers: *paar* 'a couple' and *mõned* 'some'. Both of these quantifiers are used to express a small, countable amount of something, as in *Poisil on paar õuna* 'The boy has a couple of apples' or *Poisil on mõned õunad* 'The boy has some apples'. *Paar* has a strong connotation of mapping onto two objects, and similarly to English *pair* and German *Paar*, the Estonian *paar* also refers to entities that are composed of two parts (e.g. *paar kääre* 'a pair of scissors'). Furthermore, Pezzelle et al. (2018) have found that there seems to be a larger perceived difference between the categories of small-amount quantifiers than large-amount quantifiers, i.e. there is a larger difference between *few* and *some* than between *many* and *a lot*. Considering the latter and the etymology of *paar*, *mõned õunad* and *paar õuna* should refer to a different amount of apples. Nevertheless, *paar* and *mõned* can also be used seemingly interchangeably, as in *õues on paar kraadi sooja* 'there are a couple of plus degrees outside' vs. *õues on mõned kraadid sooja* 'there are some plus degrees outside'. This raises the questions of which parts of the numeric scale *paar* and *mõned* actually occupy, and under which conditions.

We use a picture choice paradigm to investigate the scope of *paar* and *mõned*. Participants see a sentence such as *Poisil on paar õuna* 'The boy has a couple of apples' and they have to choose a picture that best matches the sentence. On each picture, there is a different number of target objects. We explore two conditions in the experiment: one with only target objects, and one with the addition of non-target background objects. From the two stimulus pictures simultaneously shown to the participant, we expect to see *paar* consistently matched with the picture that depicts fewer objects (even if the number of objects is greater than two) and *mõned* to be matched with the picture that depicts the larger number of objects.

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Who is "I" in advertising copy?: Referentially Ambiguous Uses of 1SG Pronouns in Japanese Magazines

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Referentially ambiguous usage of personal pronouns is an interesting research theme in the sense that personal pronouns are universally lexicalized in human languages, while their referential usages are pragmatically varied depending on, for instance, illocutionary force (e.g., Austin 1975, Searle 1969), the context of discourse situation (e.g., Dancygier 2008, 2017), and even the social conventions of the place where the language is spoken. For example, many scholars point out specific uses of Japanese personal pronouns not found in many Indo-European languages (e.g., Oishi 2017, Yee & Wong 2021). Japanese language has several 1SG pronouns, and native speakers of Japanese take on different 1SG pronoun depending on their personalities and the context of utterance. Interestingly, certain 1SG address forms can also refer to the second person as the occasion demands. When an adult person asks a little boy a question, s/he may use a 1SG pronoun to refer to the boy; Boku no onamae wa? 'What is your name? (lit. What is my name?)'. The 1SG pronoun boku is used only by males and is commonly used by boys. In the example, the addresser changes his/her point of view and kneels down to the child's level so that the boy gets a sense of intimacy with the adult person.

This study examines uses of 1SG pronouns in a specific type of discourse, i.e., Japanese advertising copy, to understand how readers identify their referents. In linguistics, advertising copy is a fascinating research area because it reveals copywriters' thought processes, from the creativity of advertising copy to the realm of metaphor apparent both in language and in visible information like pictures. This study will focus on a subtle communication strategy between advertising copy and the readers, in other words, with potential consumers. In particular, I am interested in which pronouns elicit the greatest empathy with 1SG pronoun "I" of the advertising copy. Ultimately, based on data from recently published Japanese magazines and a survey of 307 native speakers, I argue that while the 1SG pronouns watashi, boku, and jibun are all used in advertising, jibun seems to be most readily understood as referring to the reader him-/herself. This conclusion is significant because it suggests that the pronoun jibun may be most effective in creating attractive advertisements for native Japanese readers. Based on these results, I suggest that readers' different perceptions of the referent person of advertising copy have important implications for advertisement copywriting.

Event cognition perspective on how children learn the expressions of time

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This presentation explores how event cognition, the domain-general cognitive capability, underlies children's development of the expressions of time. Previous studies have brought forth this interrelation (Ames, 1943; Weist, 1989; Surakka, 2019) but no systematic observation, to my knowledge, has yet been conducted.

In this presentation, I will first review studies that have taken a stand on the mentioned relationship. As a result of my observation, I will outline a developmental path that combines the perspectives of event cognition and linguistic expression of time in children. The path will be presented with empiric examples form the corpus data of the Finnish-speaking children from 2½ to 8 years of age. The corpus has been collected as audio recordings and diary notes. In addition to children's utterances, the corpus contains information about the people, space, actions, and shared knowledge that took place or were referred to in the usage event.

Capability of perceiving and segmenting action patterns has occurred to be essential in children's verb acquisition (Golinkoff & Hirsh-Pasek 2006). Expressions of time are typically adverbials that modify the verb element in utterances. Therefore, the perspective of verbs (including tense and aspect) cannot be bypassed when observing the adverbial development. Event cognition (Ibbotson 2020: 58–69) is built on the children's understanding of action patterns. By development, children become aware of actions being meaningful and having beginnings, ends and inner structure. Actions in an event may occur sequentially or simultaneously; especially when simultaneously, the phenomenon of person perspective joins the cognitive repertoire needed in the interpretation of an event.

The first indication of linguistic action boundary marking (postulating action boundary recognition) in Finnish concerns early verb inflection. In the study of Laalo (2003: 330–333), the child, 18 months of age, formulates a verb form that builds up an early contrast between the present and past tense by uttering *loppu* 'ended' (when the child has finished eating some food). The presentation will shed light on how the development of event cognition being manifest in children's expressions of time continues at the later phases of development and becomes manifest in temporal adverbials.

The theoretical emphasis of the presentation bases on the Usage-based approach to language acquisition (Tomasello Lieven & Tomasello 2008), the literature on the event cognition (Ibbotson 2020: 58–69), and studies addressing the event-centered conceptualization as the conceptual basis of the expressions of time in children (Ames, 1943; Weist, 1989; Surakka, 2019).

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Do we talk differently when we describe fast motion? Evidence from the *frog stories* experiment in Estonian

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Theories of embodiment suggest that language is grounded in perception and action (Johnson 1987; Barsalou 2008). This means that language evokes bodily simulations of the described event (Matlock 2004; Bergen & Wheeler 2010; Speed & Vigliocco 2014) and our experiences and perception are ultimately reflected in the structure of language (Clark 2006). Importantly though, not all cognitive domains evoke mental simulations (Speed & Majid 2018). Thus, there is an urgent need to examine the possible embodiment traces in diverse contexts of language use. Thus, we set out to focus on one specific, yet underlying dimension of motion which has received relatively little research attention: speed. In particular, we examine speech rate and the structure of motion descriptions in relation to the speed of the event.

We conducted the *frog stories* production task with Estonian speakers following the basic design of Berman and Slobin (1994). In this task, participants are asked to narrate a story based on the sequence of pictures from the book 'Frog, where are you?' (Mayer 1969). In our experiment, participants (N = 45) were divided into three groups each receiving different instructions with regard to narrating. Visual stimuli were constant across the three conditions. Each condition group included 15 participants. Participants in Condition A (control) were given no specific instructions as to how they should narrate the story. Participants in Condition B (slow) had to narrate the story as if the events evolved very slowly. Participants in Condition C (fast) had to narrate the story as if the events evolved very fast. Narrating was audio-recorded and transcribed, and, finally, analysed in terms of speech rate, narration length and the semantic structure of individual clauses in the narrations.

The two main results were as follows. Firstly, narrations in Condition B (slow) were substantially longer and had slower speech rates than those in Condition C (fast). Secondly, the expression of spatial aspects of the scenes was relatively similar across the conditions, but in Condition B (slow), manner was detailed more frequently than in Conditions A and C. These results indicate sensorimotor response to different speeds of motion when describing such events. They also show that in addition to the typological profile of a language, the expression of manner may depend on the characteristics of the described event itself.

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Is music always moving or can it be stable? On metaphors that epitomize a fond relationship with the music of digital games

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In a classic article, Johnson and Larson (2003) suggested that we conceptualize music through the MOVING MUSIC, MUSICAL LANDSCAPE and MOVING FORCE metaphors. Their focus was on describing how we experience compositions, which they illustrated with sentences such as: "The melody rises up ahead. At measure 4 the horns enter." (Johnson & Larson 2003: 71.) But what if we ask people to reminisce their fond experiences with music, like Gabrielsson (2011)?

We asked Finnish and British people about fond memories of the music of digital games, and received 183 autobiographical texts from Finns and 389 from Brits. They contain comments such as "...the music seemed to understand me, as if it were a friend of mine who comforted and encouraged me to endure a stressful time." (A Finnish writer). As the example indicates, the focus in the stories is not necessarily in describing dynamic episodes of musical experiences, but they often describe the nature of relationship with the music in question.

We have analysed the Finnish data and suggest that there are eight main categories of metaphors there. We have labelled them AGENCY, FORCE, SPATIAL RELATIONSHIPS, VEHICLE, MEDIATOR, CONNECTION/JOINT, OBJECT and FEEL. Johnson and Larson's (2003) MOVING FORCE metaphor is close to VEHICLE, and they talk about agency and objects. However, they have not identified such metaphors as CONNECTION/JOINT or FEEL. To put it simply, our metaphors seem to be more static. The question is, does this relate to the fact that we are talking about memories of music, or to the fact that we are talking about the music of digital games?

Our aim for this talk is to proceed to analysing the British data, so that we can present findings concerning both sets of data and make comparisons. Our tentative finding so far is that several of the metaphor categories are shared between the two data sets but that there are some expressions that are typical of one or the other. For example, Finnish people often talk about storing the music in their minds or heads. In the British data, music is often a bringer of something: "I recently heard the music on a YouTube video I was watching and it brought back memories of myself and my younger brother playing the game on the weekends."

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Language-internal variation in event segmentation and naming

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"*Event segmentation* is the process by which people parse a continuous stream of activity into meaningful events" (Zacks & Swallow 2007, emphasis ours). On the level of cognition, event segmentation somewhat consistently follows certain patterns: when asked to define event boundaries by pressing a button while watching a movie, participants with different backgrounds end up in very uniform judgments. Event segmentation is automatic and hierarchically structured. (Zacks & Swallow 2007.) On the level of language and encoding events, more variation arises.

Cross-linguistic variation in encoding events is widely documented, especially in the context of motion events (e.g. Bohnemeyer et al. 2007), but there is also variation within speakers of a single language, for example in factors such as granularity of description or accuracy in naming the event. Some of the variation depends on individual differences in visual perception that is known to be highly selective: we tend to pay attention to the details that are crucial in understanding the current situation (Baker & Levin 2015). Encoding also varies with respect to the situations that are described.

Elicitation with visual stimuli can be used to capture different levels of variation. We have used the video grid *Trajectoire* (Ishibashi et al. 2006) to collect event descriptions from 50 young adult native speakers of Finnish. The videos represent different kinds of actions and activities performed by actors. Most of the stimuli include motion events (e.g. a woman walks into a cave), others display for example manipulation of objects (e.g. a woman folds a dress) or static situations (e.g. a man lies on the lawn). The stimuli contain both bounded and unbounded events, which is an important factor with respect to event segmentation (Ji & Papafragou 2020).

In our talk, we discuss the 3185 descriptions of the 64 video events that include one moving or acting Figure (dismissing interactions at this point). The descriptions are analyzed from the point of view of language-internal variation in event segmentation and naming and assessed with respect to different cognitive factors that are involved in event cognition.

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The impact of social interaction and cognitive diversity on semantic search: an agent-based simulation

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Across a number of domains within design, innovation, research and education, ideation processes unfold in collaborative contexts where two or more individuals interact to find novel and useful solutions to a problem. Divergent thinking is considered a central component of creative ideation, and many classical creativity tests attempt to measure the ability of individuals to flexibly and fluently come up with as many and as different associations as possible in response to a prompt (Baer, 2014; Runco, 2010).

The influence of social interaction on creative processes of divergent thinking remains controversial: some studies report benefits from interaction while some do not (Aggarwal & Woolley, 2019; Brophy, 1998; Kohn & Smith, 2011; Mullen et al., 1991). One problem in this regard is that most existing studies only measure the performance of individuals and groups "offline" in terms of the number and quality of resulting solutions, while the underlying cognitive mechanisms of unfolding divergent thinking processes are often not accessible (Said-Metwaly et al., 2017).

The purpose of this study is to address the underlying computational cognitive, linguistic, and social mechanisms of collective divergent thinking, in order to unravel their dynamics and how they relate to performance. In particular, we use agent-based simulation to investigate how the degree of cognitive diversity between interaction partners affects collective semantic search processes. Agents performed a verbal association task individually and jointly in pairs. We created pairs of varying cognitive diversity by manipulating properties of the vector spaces defining their semantic memories. We find that cognitive diversity positively stimulates the flexibility of agents' collective semantic search, giving rise to higher fluency (more associations) and originality (more 'rare' associations). While cognitively similar agents tend to exploit local semantic neighborhoods, diversity promotes more explorative search, with longer distances traveled in semantic space. This helps diverse pairs reach more distant areas of semantic space and escape cognitive fixation. However, we also find that too high levels of diversity can have detrimental effects, as overly exploratory behaviors make pairs leave solution saturated areas prematurely and increase the risk of reaching semantic "dead ends".

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Into space and *ut i rymden* - A Corpus-Based Image-Schematic Analysis of Prepositional Constructions in English and Swedish

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While researching the linguistics of outer space, I have observed an intriguing difference between my research language (English) and my mother tongue (Swedish). For example, in English, people travel *into space*, whereas in Swedish, they travel *ut i rymden* (Lit. out in(to) space). English and Swedish are two closely related languages, yet they construe motion from earth to outer space using different prepositional constructions. Furthermore, the prepositional constructions highlight different parts of the motion at hand. In the English construction, the focus is on the destination (outer space), whereas the point of departure (Earth) is more present in the Swedish construction.

This presentation relies on English data collected from Corpus of Contemporary American English (COCA) and Swedish data is collected from Korp. The aim is to account for the different prepositional constructions used in English and Swedish when talking about motion from earth to outer space. The most common ones are *into* and *ut i.* In addition to these the prepositions *to/till* and *toward(s)/mot* are also used and they combine in various ways with the particles *off, up/upp,* and *out/ut.*

These different prepositional constructions construe both outer space and the motion towards it in different ways. In this presentation, the different prepositional constructions are analyzed through the theoretical lens of image schema (Johnson, 1987). Motion inherently invokes the SOURCE-PATH-GOAL image schema, as "our lives are filled with paths that connect our spatial world" (Johnson, 1987: 113). However, different prepositional constructions can cause or focus to shift between the elements in this schema. As for the present study, some prepositional constructions are focused firmly on the GOAL, some invoke the SOURCE either explicitly or implicitly, and some focus only a very specific part of the PATH. In addition to the SOURCE-PATH-GOAL schema, some of the constructions also invoke the schema of CONTAINMENT. Both earth and outer space can be construed as CONTAINERS, which one can enter and exit, despite there not being a clear physical boundary between them to cross.

In summary, motion between earth and outer space is construed differently both within the languages at hand and between them. The focus shift depending on the prepositional construction used, and this contributes to different perspectives on earth, outer space, and the motion between the two.

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Vocabulary content rather than size predicts sex/gender before the age of three years

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Does sex/gender matter for language acquisition? Small female advantages in vocabulary size are well-documented. Girls, on average, begin to speak slightly earlier than boys (Bleses, et al., 2008; Wallentin, 2020), and small sex/gender differences in mean vocabulary size have been shown consistently across languages, with girls outperforming boys on measures of receptive and productive vocabulary from a young age (Berglund, et al., 2005; Bleses, et al., 2008; Fenson, et al., 1994; Frank, et al., 2021; Simonsen, et al., 2013). In this study, however, we show that children's early vocabulary composition is a significantly better predictor of sex/gender than size.

We conducted classification analysis on word production from children (12-36 months, n =39,553) acquiring 26 different languages, using data from the MacArthur-Bates Communicative Development Inventories *Words and Sentences* (MB-CDI: WS)(Braginsky, et al., 2020; Fenson, et al., 2007; Frank, et al., 2017), available from Wordbank (http://wordbank.stanford.edu).

Children's sex/gender was classified above chance level in 22 out of 26 languages. Classification accuracy was significantly higher than for models based on vocabulary size and increased as a function of sample size. Classification accuracy also increased as a function of age and peaked at 30 months, reaching accuracy levels observed in studies of adult word use. A sex/gender score was computed for each word in a language based on classification coefficients. The higher the score, the more predictive a word is of sex/gender. We used semantic/grammatical category tags from the Wordbank database to predict the sex/gender scores for individual words. Within languages, several categories were found to predict the sex/gender score. In 24 out of 26 language samples, the category *Clothing* significantly predicted sex/gender score with a negative parameter estimate, indicating the category being used more by girls. In 23 out of 26 language samples, the category *Vehicles* significantly predicted sex/gender score with a positive parameter estimate, indicating the category being produced more by boys.

Across languages, a mixed-effects analysis with category as fixed-effects and language sample as random effects showed that sex/gender scores were significantly predicted by the 3

categories *Animals*, *Body parts*, *Clothing*, *Connecting words*, *Games/Routines*, *Toys* and *Pronouns*, all of which were significantly more likely to be produced by girls; and *Outside/Places* and *Vehicles*, which were more likely to be produced by boys.

These differences in vocabulary are indicative of biocultural differences in the lifeworld of children and may themselves cause further differences in development.

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Text-based easy language research: Perspectives on developing easy Finnish guidelines

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Easy Finnish (*selkokieli*) is an adapted language form that is made easier in terms of words, structure, and content (Selkokeskus 2021). It is designed to make information accessible for people who find standard Finnish too difficult to read and understand. Easy Finnish has been used since the 1980s, and the first guidebooks were published in the 1990s (see Leskelä 2021 for a review). Guidelines have been developed over the years, and today, criteria for basic-level easy Finnish are presented in *Selkomittari*, a practical tool for assessing the language and layout of easy Finnish texts (Selkokeskus 2018). Despite being widely used, most guidelines for easy Finnish are practical writing instructions based on experience rather than scientific research. This presentation focuses on text-based perspectives to easy language research and the use of corpora in developing easy language theory.

Since the 2010s, text-based research approaches have introduced new perspectives to easy language. Corpus studies have been used to empirically describe the properties of easy languages in countries, where such corpora are available. In Finland, easy language corpora include newspaper texts from Selkosanomat/Selkouutiset and Leija (University of Helsinki 2017), and news texts from Yle news archive in easy-to-read Finnish (Yleisradio). The corpora are currently used in several ongoing studies. In other European countries, corpus analyses have been conducted, for example, to study the properties of easy German (see, e.g., Rink 2020) and to compare the linguistic properties of easy-to-read and standard Dutch newspaper texts (Vandeghinste & Bulté 2019).

This presentation will focus on the effects that easy Finnish guidelines may or may not have on basic-level easy Finnish. How does language change, when certain linguistic forms are recommended as easy-to-read variants, and others are restricted? The topic is discussed based on the results of a published research article on the meanings and use of the word *ihminen* ('*human, person*') in easy-Finnish newspaper texts (Valtasalmi 2021). Discussion will also include observations made during ongoing research.

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Motion events in Swedish and French: Linguistic expression and beyond

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Motion is omnipresent on our lives. It is something that we can observe and experience in the same way regardless of the language we speak. It has been noted, however, that languages differ with respect to how the concepts around spatial relations are lexicalized (Talmy 1991; Pourcel 2009; Slobin 2004; Zlatev et al. 2021). In particular, it has been claimed that Romance languages (and French in particular) are restrictive with regards to expressing manner of motion in tight telic constructions (Hickmann et al., 2017). French, unlike Swedish, has also been said to be a 'lowmanner-salient language' (Slobin, 2006) and a low-path-salient language (Ibarretxe-Antuñano 2009).

In this study, six short video stimuli presenting as stories and including various motion situations were used to elicit narratives from speakers of French and Swedish (20 participants in each group) which then were closely analyzed using Holistic Spatial Semantics (Blomberg, 2014) as a theoretical framework. The goal was not only to establish how languages differ with regards to strategies the speakers use to present motion events, but also to take a closer look at commonalities behind the two structurally divergent linguistic repertoires. A special attention was given to meanings that are "covertly expressed" (Blomberg, 2014). The term "covert expression" refers to meanings that are not explicitly coded but, nonetheless, implied by the speaker as stemming from the shared understanding of (a) the situation described or (b) knowledge of the world. Including covert expression into the analysis helps to overcome the notorious Pragmatics-Semantics divide and analyze how meanings are shared across languages regardless of whether they are linguistically coded or not.

In line with Pourcel & Kopecka (2005) the results show that French has low tolerance to semantic redundancy, hence frequent omission of linguistic unites encoding path, landmark and manner "inherent to an event" (Akita, 2017). As well as that, French and Swedish demonstrate different syntactic strategies for expressing complex motion situations (e.g. chaining VPs in French and complex paths expressed through a chain of particles/adverbs in Swedish). At the same time, preference for lexicalizing manner of motion inherent to the event over the concomitant one (Akita, 2017) is less observable in French which seems to rely more heavily on contextual and general knowledge and demonstrates a tendency for supplying information on manner of motion that cannot be inferred. These findings leave one to wonder how much of what is typically called "pragmatic inference" is universal.

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"We will do this by taking the lead". A linguistic analysis of the negotiation on political identity

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The political role of the nonprofit sector in the Swedish welfare state is currently being negotiated. Since the introduction of New Public Management, nonprofit organizations are expected to play a greater part in welfare reforms (Lundberg, 2020). However, Swedish nonprofit organizations providing welfare services, e.g. schools and health clinics, form a contested issue (Johansson et al. 2015).

My interdisciplinary study studied this negotiation on a local plane, more specifically within a nonprofit organization. The purpose of my study was to investigate the negotiation regarding identity in Save the Children Sweden, where I was an embedded researcher during the timespan of my research (February 2020-February 2022). To reveal the negotiation on political identity that took place underneath the surface of the debate on welfare services, I operationalized my purpose into three research questions: RQ#1) How were "we" described? RQ#2) What metaphors were used about the organization? RQ#3) What stories were told about the organization's origin?

Departing from Busse (1997) and Halliday (2014) I analyzed all "we" about the organization to see what the pronoun referred to, and what kind of verb (material, relational or mental) it was connected to in the clause. I then used MIPVU-methods (Nacey et al. 2019) to analyze metaphors, and at last, by the help of narrative analysis (Greimas 1966, Labov 1972), I searched for stories. My results on RQ#1showed that advocates of the idea that Save the Children Sweden would perform welfare service used "we" in an inclusive way about the organization, and mostly in connection to action verbs (material processes). The opponents of the idea of welfare services instead used "we" both in an inclusive and exclusive way - either embracing all Swedish citizens/the whole Swedish civil society, or only referring to a group of members of Save the Children Sweden. No certain verb type stood out, instead the use was balanced. My interpretation was that the advocates cared about its brand and wished to appear potent, while the opponents rather stressed how the organization belonged to a greater context and gave attention to the member federation. Regarding RQ#2, the advocates used metaphors relating to SOURCE-PATH-GOAL, highlighting their determinedness, while the opponents instead used metaphors relating to PERCEPTION (e.g. "see"), thereby giving their analytical capacity prominence. Concerning RQ#3, the advocates made use of a strong narrative, legitimizing the idea of welfare services, whereas the opponents lacked any such narrative.

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Posters

The Different Impacts of Formal Versus Informal Acquisition of Another Language on Metalinguistic Awareness

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Bilingual populations have demonstrated enhanced executive functioning skills compared to monolinguals (eg. Barbu et al., 2019; Barac & Bialystok, 2012). A sub component of executive functioning, metalinguistic awareness, does not show the same consistent bilingual advantage (Reder et al., 2013; Bialystok, 2001). Most of the studies that we have examined do not consider how language acquisition or learning approaches could be impacting abilities in that language. We believe that the mixed findings are due to different approaches to language acquisition resulting in a differential effect on metalinguistic awareness and the different sub components of metalinguistic awareness (morphologic, syntactic, and phonologic).

In the current study, we addressed this inconsistency by considering if a formal or informal approach to language learning played a role in the bilinguals' metalinguistic awareness and if different types of metalinguistic abilities were affected differently. A total of 304 participants, between the ages of 17-43, completed the study online, with 136 monolinguals, 105 formal bilinguals, and 63 informal bilinguals. Participants completed a language survey, followed by seven tasks measuring morphologic, syntactic, and phonological awareness. Scores from these tasks were compared between our three groups using multiple Krukal-Wallis tests. Overall, assessing all components of metalinguistic awareness, there were mean rank differences between the groups, H(2)= 6.96, p= .031, n2H = .016. Specifically the monolingual group performed marginally better than both the formal (p=.026) and informal (p=.032) bilingual group using a bonferroni-adjusted alpha level of p=.017 for all pairwise comparisons. This was particularly apparent on the word order syntactic task, in which monolinguals performed better than the formal bilinguals, p= .005. Bilinguals who acquired a second language informally, performed similarly to the monolinguals, suggesting that the active use of a language in an informal setting provides better syntactic awareness. Therefore, although there may be no bilingual advantage in metalinguistic awareness in young adulthood, it does not provide a deficit, specifically for informal learners.

Impact of Mistranslations on Cognitive Retention: Case of Force Dynamics

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My poster is based on my pending publication (Wisniewska, 2022) and ongoing PhD research, part of a project aiming at constructing a systematic description of translation at sentence level, following the conceptual schematic systems elaborated by Talmy (2000/2001): the Configurational Structure System, the Attentional System, the Perspective System and the Force-Dynamics System. Previous results include evidence of the dissociation of linguistic and cognitive retention in translation for the Attentional System and the Force-Dynamics System. Based on these findings, the Cognitive Retention Hypothesis has been proposed: When describing translation from a source text to a target text, it is possible to distinguish linguistic and cognitive levels, and it is the cognitive level that is primarily retained in translation (Mäkisalo and Lehtinen; 2014, 2017, 2019).

In my research, I concentrate on the retention of Force Dynamics in translation and on the evidence found on dissociating linguistic and cognitive description in translation. The study follows the proposed hypothesis, and its objective is to explore how information is retained in translation at both linguistic and cognitive levels, arguing that the multilingual approach to the Force-Dynamics theorisation provides a broader perspective to describe aspects of language and cognition than most cognitive theories. The stated issues are studied on small-scale, self-compiled corpora of phrases containing Force-Dynamics patterns from fragments of English, Finnish and Polish literary texts. Literary data allows to focus on translations theoretically undergoing very few changes, with a tendency to be faithful, yet creative and, at times, surprising in translation solutions. A modification in Force Dynamics during translation can be illustrated with the example: I can try to help you in English translated into Finnish as Antaisit minun yrittää auttaa (back-translated as You should let me try to help). It clearly shows that Force Dynamics in the source is modified in the target. There is a psychological force that appears as an activity between the two participants. Also, there is a change in force direction. The focus is shifted from the addresser (I can try [&]) to the addressee (You should let me [&]).

In my poster, I focus on mistranslations found in the compiled corpora and account for their impact on distorting the Force-Dynamics event scenarios found in the studied source texts. The analysis discusses the notion of cognitive economy, which is a way of processing information based on intuition and, thus, often leading to overlooking crucial details of the original (Hietaranta, 2017).

Problem Sources in Consecutive Interpreting

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Over the recent decades, interpreting has been playing an increasingly important role in many cross-cultural contexts, in which the quality of the interpreting performance becomes the key to the success of communication. In practice, many problems can degrade the quality of the interpreting performance. Extensive research has been conducted on quality assessment in interpreting (Kellett Bidoli, 2000; Kurz, 2001); however, few studies have taken the perspective of the problems that affect its quality. Drawing on the theoretical framework for speech production (Levelt, 1995), problem sources in language production (Dörnyei and Scott, 1997), and disfluency as a surface marker and representation of problems in language production (Bosker et al., 2012; Clark, 2006; de Jong, 2017), I explore the interpreters' cognitive process to identify their problem sources in the second language production in the context of consecutive interpreting.

The data for this study include video recordings of interpreting performances from 25 Danish and 25 Chinese interpreters on two interpreting tasks with different levels of difficulty, as well as their stimulated self-reports on problem sources. The participants' disfluencies in the recorded interpreting performances are marked on the performance transcripts, which serve as prompts for the participants' self-reports of identification of problem sources. Descriptive and inferential statistical analysis is applied to analyze the participants' patterns of the problem sources and the difference of the patterns between 1) different levels of difficulty and 2) Danish and Chinese participants. In addition to identifying the problem sources in interpreting performances, I hope my study will inspire strategies for training and teaching in interpreting and provide a reference for interpreters' qualification assessment.

This topic is part of my Ph.D. project, which is an interdisciplinary study that explores the patterns of disfluency and problem sources and their relationship with the quality of the interpreting performance.

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Workshops

Workshop: How do we chunk up speech in real time – and how consistent are our perceptions?

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An intriguing question in human language processing is how we manage to make sense of the continuous, rapid flow of speech that we hear in real time, despite the limitations of working memory (Christiansen & Chater 2016). It is reasonably well established that many kinds of complex stimuli are processed by segmenting them into smaller chunks, which are integrated in an emerging representation of a larger whole. This has been found for example with complex static objects (e.g., Biederman 1987, Kimchi 2015), visual events (Zacks & Tversky 2001; Radvansky & Zacks, 2014), and music (Sridharan et al., 2007). Chunking continuous stimuli can thus be conceived as a domain-general phenomenon (e.g., Blumenthal-Dramé et al., 2017), but research into it is largely missing for language. There is, of course, a considerable body of experimental research on the segmentation of relatively low-level phenomena (phonology, morphology, syntax, lexical semantics) based on contrived examples. On the other hand, there is rich corpus-based evidence of repeated multi-word expressions (aka formulaic expressions, constructions, fixed expressions, among others), which many scholars (e.g. Bybee 2003) assume, but have not shown, to be also units of processing. These traditions do not meet, and very little research is found on the segmentation of continuous naturally-occurring speech. In this theme session, we address the issue of chunking as it is performed intuitively by linguistically naïve listeners on extracts of continuous, spontaneous speech. We hypothesise, in line with Sinclair & Mauranen (2006), that fluent speakers of a language chunk up the language they hear in largely convergent ways.

The session is based on two research projects at the University of Helsinki, which investigate chunking in naturally-occurring continuous speech. The experimental methods include a behavioural (Vetchinnikova et al., 2017; Vetchinnikova et al., under revision) and a brain scan component (Anurova et al., under revision). Findings support the hypothesis that listeners' intuitive marking of chunk boundaries is highly convergent. The question arises about what linguistic cues affect their perception of boundaries. Our presentations look at chunk perception from various interrelated angles: different languages, native and non-native speakers, and chunking under different experimental conditions. Analytical methods include quantitative and qualitative approaches. The focal issue throughout is which linguistic cues might best explain the placement of chunk boundaries: prosodic, syntactic, meaning, discourse structure, or combinations of these.

Estimating chunking ability of L2 listeners

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Linguists and cognitive scientists believe that humans understand speech by chunking it up into smaller units (Sinclair & Mauranen, 2006; Christiansen & Chater, 2016; Henke & Meyer, 2021). Author et al. (under review) proposed a distinction between such perceptual chunking and usage-based chunking which has received much more attention in the literature (Bybee, 2010; Ellis, 2017; McCauley & Christiansen, 2019). Perceptual chunking provides a temporal window for further processing, while usage-based chunking gives rise to multi-word units and more complex structure in language. This paper probes the hypothesis that perceptual chunking is related to comprehension.

Fifty participants of an English as a lingua franca background listened to 97 extracts of natural speech and simultaneously marked chunk boundaries in the transcripts using a purpose-build web-based application ChunkitApp (Author et al. 2017). After listening to each of the extracts, they answered either a true-false comprehension question or a self-evaluation question asking: "Do you understand what the speaker was saying?" with three possible answers yes/roughly/no. The participants' language proficiency was tested with the elicited imitation task. Earlier research showed that extracts varied in how easy or difficult it was to chunk them (Author et al. under review). This paper will use Rasch analysis to estimate the chunking ability of the participants. It will then relate chunking ability to their comprehension of the extracts and to their language proficiency. It is expected that listeners who found the extracts more difficult to understand were also worse in chunking them. It is also possible that chunking ability can predict language proficiency.

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Chunking-in-noise: high-level segmentation of spontaneous speech in different listening conditions

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Speech perception requires segmentation of the input to make sense of what is being said. Multiple linguistic cues contribute to the perception of a boundary. Mattys et al. (2005) suggest that speech segmentation happens under the influence of both sentential, lexical and sublexical cues, with the former taking precedence. All cues interact during speech segmentation, with lower-level tiers (acoustic and prosodic) becoming more relevant when higher-order information (syntactic and semantic) is not available (e.g., when the signal is degraded).

The present study seeks to understand whether the cue hierarchy introduced by Mattys and his colleagues is applicable to speech segmentation extending beyond syllables and words into multi-word units, or chunks.

We conducted an experiment using shortish spontaneous speech extracts as stimuli across two listening conditions: 'in quiet' (without interference) and 'in noise' (with the signal degraded by a babble noise mask). The extracts were randomly selected from the ELFA corpus (Mauranen, 2008) and MICASE (Simpson et al., 2002) and voiced over to improve the sound quality. All the extracts were scaled to average root-mean-square (RMS) for sound normalisation purposes.

Two groups of native English speakers (N=29, 17 females, mean age = 35.4 and N=27, 15 females, mean age =32) without history of hearing disorders were recruited online. The experiment was conducted through a custom tablet application, ChunkitApp (Vetchinnikova et al., 2017), which plays each extract through participants' headphones, simultaneously displaying their transcript on the screen. In both conditions, participants were instructed to follow their intuition and tap the screen when they felt like one chunk ended and another began.

The extracts were annotated for boundaries in syntax (manually) and prosody (continuous wavelet transform, Suni et al., 2017). We fit a logistic mixed-effects model with chunk boundaries marked by participants as the response variable, with listening conditions, syntactic and prosodic boundaries and their interactions as fixed effects, and random intercepts for participant and extract. Our analysis shows that in both listening conditions, cue interaction increases the chance of segmentation and prosodic cues carry more weight than syntactic ones. If the signal is degraded, however, only the presence of both guarantees segmentation. Our results thus lend support to the cue hierarchy proposed by Mattys and colleagues. It appears that in high-level segmentation, prosodic cues are more robust than syntactic cues in this particular speech-in-noise setup. Other noise gradations are needed to tease out more profound differences.

Making sense of natural speech: prosodic and syntactic cues in L2 speech segmentation

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Language arranges itself along a continuous line, either in time (speech) or in space (text). As working memory is presumably limited to four units (Cowan 2001), it goes largely uncontested that language processing must proceed in chunks (Christiansen and Chater 2016). We report two experiments of segmentation in natural, spontaneous speech. We investigate how language experience affects natural speech segmentation and how these segmentation patterns may be reflected in the brain.

In the first experiment, we tested intuitive chunking in L1 and L2 speakers of English, assuming that L1 speakers have more extensive experience of English than L2 speakers. We asked participants to listen to extracts, follow the transcript on an iPad, mark boundaries by tapping the screen and answer a comprehension question after each extract (adopted from Vetchinnikova et al. 2017). The perceived boundaries resulted in 'chunks'. We assessed the participants' agreement and segmentation strategies and found that prosody is what both groups rely on most, with L1 users using it slightly more. Moreover, both groups performed alike in the degree to which they converged on boundaries and successfully answered comprehension questions, suggesting that language experience has a slight effect on cue utilization but does not affect the ultimate outcome of natural speech segmentation.

In the second experiment, we went on to investigate the roles of prosody and syntax in L2 speech segmentation using MEEG recordings in healthy adults. The objective was to test how chunk boundaries and segmentation cues might be reflected in brain activity. Participants listened to extracts of natural speech from the same database as in Experiment 1, again followed by comprehension questions. We inserted 2-second gaps into each extract, some at chunk boundaries obtained from Experiment 1, others within chunks, and recorded brain activity during these two contrasting types of pauses. Pauses at chunk boundaries elicited a CPS in sources over bilateral auditory cortices. By contrast, pauses within a chunk elicited a biphasic emitted potential with sources in the bilateral primary and non-primary auditory areas with right-hemispheric dominance and were perceived as interruptions. Chunk boundaries and non-boundaries thus elicit distinct evoked activity in the brain. Moreover, chunk boundaries were influenced by both prosody and syntactic structure, whereas chunk interruptions by prosody only, suggesting that the integrity of the intonation contour may be considered an essential property of the perceived chunk.

What causes the perception of boundaries in Finnish – prosodic and syntactic-semantic features examined

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The starting point for speech segmentation has mostly been the needs of a linguist working on speech analysis. Little attention has been given to how untrained or "ordinary" language-users process linguistic input (Barnwell 2013). With the data collected in a listening experiment from linguistically untrained native Finnish speakers I investigated the possible causes of the perception of chunk boundaries.

This paper deals with the prosodic-phonetic and syntactic-semantic characteristics of chunk boundaries Finnish speakers perceive in spontaneous speech. Firstly, I will show how perceived boundaries match prosodic boundaries: those detected automatically using a Continuous Wavelet Transform technique as well as manually analyzed using Praat. I demonstrate which acoustic features predict the perception of a boundary in Finnish spontaneous speech. With the analysis of the data at hand, I question the role of pauses as "punctuation marks of the spoken language". More reliable acoustic features in boundary places are changes in fundamental frequency and speech tempo.

Secondly, syntactic analysis of the data shows that certain conjunctions almost always cause the perception of a boundary. In this presentation, I will look into the semantics of these conjunctions as well as the semantic features in other boundary places.

Finally, I suggest it might be worth considering a way of looking at segment boundaries not as a strict dividing line in between orthographic words, an end and a beginning, but as a feature of the words themselves, possibly even clusters of words. This view emphasizes the role of beginnings in defining chunk boundaries. In this it resembles the cesura approach by Barth-Weingarten (2016).

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What happens if a chunk is interrupted?

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There is reason to assume that language is processed like many other complex stimuli, for example visual events (e.g. Radvansky & Zacks, 2014), by segmenting it into smaller chunks that get integrated into larger representations of meaningful wholes. The chunking lets listeners out of the impasse of the 'now-or-never bottleneck' (Christiansen & Chater 2016) generated by the constant inflow of input under the limitations of working memory, and enables them to make sense of it.

When listeners chunk up ongoing speech, they tend to do it convergently, as posited by Sinclair & Mauranen (2006). We found support for this in a behavioural study which invited linguistically naïve participants to chunk up continuous extracts of authentic speech (Vetchinnikova et al., under revision). We then went on to use the same extracts with similar participants but with silent 2-sec. pauses inserted as triggers in an MEEG experiment. The trigger insertion criteria were based on timing, not linguistic properties. Responses to triggers at chunk boundaries with high levels of convergence were significantly different from responses to triggers at non-boundaries leading to interruptions of speech (Anurova et al., under revision).

Apparently, perceived interruptions obstruct predictions already formed and preactivations of meanings. These may be based on preceding syntactic, prosodic, semantic, or discourse cues, of which the last two are hard to capture without close qualitative analysis. This paper imposes a qualitative analysis of 50 of the 10-45 sec. extracts up to the triggers to assess the severity and explore potential reasons for their disruptiveness for constructing a meaningful representation of the extract. The perspective is, admittedly, the analyst's post hoc view, but close reading can bring to light what escapes quantitative analyses.

The analysis suggests that different levels of language, discourse (beyond sentence) and syntax (sentence, clause) are differently relevant in their overall effect and at different points in the speech flow. At times discourse level cues seem to exert strong prediction and preactivation of upcoming meanings, at other points the very local level, i.e. clause or phrase, assumes priority. Moreover, there would seem to be, overall, more and less intense episodes with regard to meaning, that is, some passages in the speech flow provide more ingredients for constructing semantic representations and preactivations than others. The less intense stretches relate to organizing language, with dysfluencies and restarts getting absorbed into more meaning-constructing stretches, which together make up perceived chunks.

Workshop: New perspectives on metaphor and metonymy

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The classical view on the nature of metaphor vs. metonymy often refers back to Jakobson's distinction between metaphor as based on similarity and metonymy as structured in terms of contiguity or closeness (Jakobson 2002). However, within Cognitive Linguistics and related fields, research has emphasized the complex and intertwined relationship between metaphor and metonymy in pointing to the many ways in which metaphor and metonymy interact (Barcelona 2000, Croft 2002, Panther 2006, Littlemore 2015, Ruiz de Mendoza Ibáñez 2017).

Traditionally, metaphors are analyzed and understood in terms of cross-domain mapping between different domains, whereas metonymic expressions are better understood in terms of domain highlighting in which one well-understood or easily perceived aspect of something is used to represent or stand for something else within the same domain. In this way, the cognitive motivation for metonymy is not to "understand and experience one thing in terms of another" (as in metaphor), but rather to provide mental access to another part of the same domain. However, much research has shown that the two notions are often not that easily distinguishable. Thus, the term "metaphtonymy" (Grossens 1990) has been used to describe the interaction between metaphor and metonymy in a variety of ways, including metaphor within metonymy and metonymy within metaphor. Likewise, it has been shown that primary metaphors often have a metonymic basis which is projected onto abstract domains (Kövecses 2013). This aspect has also been investigated by gesture studies investigating the metonymic bases of gestural manifestations of primary metaphors (Mittelberg & Waugh 2009). Furthermore, recent studies have investigated the role of multimodal metonymy and multimodal metonymic chains in visual advertising (Sobrino 2018), the role of environmental and social features in the creation of embodied metonymy in different genres, including fiction (Littlemore 2017), as well as the indexical affordances of metonymy in relation to metaphors of morality (Jensen in press). More recently, it has been suggested that conventional metaphors within CMT can be better explained by metonymically driven categorization processes than by cross-domain mapping principles (Gibbs 2017, Gibbs in press).

In this theme session, we invite papers with new perspectives on the intertwined nature between metaphor and metonymy in areas such as written or spoken discourse, multimodal communication, or gesture.

Hypallage is a rare bird. Not.

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University of Hamburg

We take a Cognitive Pragmatic approach to hypallage to show that this "marginal trope" can be elucidated in terms of conceptual metaphor, conceptual metonymy, and pragmatic inferencing. Hypallage is defined as 'a combination of seemingly incompatible features' and has been exploited artistically and creatively since antiquity in poetic and narrative discourse. A classic example of hypallage is the 2,000-year-old phrase "angry crowns of kings" (*Odes* of Horace). The hypallactic incompatibility in "angry crowns" arises from the position of *angry* as a prenominal modifier of *crowns*; but anger is an emotional attribute of humans, in this case *kings*. This incompatibility motivates an imaginative *transposition* of the adjective *angry* to *kings*, which resolves the semantic anomaly. Likewise, the hypallactic expression *rare bird* in the title of our talk denotes a literal or (more often) figurative bird or entity that is rarely encountered by *people*. The "bird" does not *per se* have the property of being rare. As the "Not." in the title of our talk indicates, we deny that hypallage itself is a rare phenomenon restricted to *belles-lettres*; rather hypallage is a highly entrenched figure in ordinary language, as illustrated by such examples as *healthy diet*, *unhappy marriage, Merry Christmas*, *Happy Birthday*, *foreign correspondent*, *drunken brawl* and many others.

Hypallactic expressions constitute a violation of the Iconic Proximity Principle (Givón 2001). In hypallage, *iconic motivation* competes with *figurative motivation* and, significantly, the latter prevails. Interestingly, structural parallelisms exist between hypallactic transpositions and, for example, the shift of *not* in 'negtransportation', and the figurative transposition of 'Not.' in our talk title, a discourse construction we term 'focal negation'. In conclusion, we surmise that such anti-iconic constructions are not isolated lexicogrammatical phenomena and that the prioritizing of figurative motivation at the expense of iconicity is a more general cognitive mechanism ripe for further research.

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"We have such a stain on us": The metonymic affordances of the stain metaphor

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Within Conceptual Metaphor Theory (CMT) the metaphoric use of "stain" has traditionally been accounted for in terms of the conceptual metaphors GOOD IS CLEAN, BAD IS DIRTY as part of a larger framework on embodied moral reasoning (Johnson 1994, Lakoff and Johnson 1999, Gibbs 2017). This conceptualization involves the claim that we understand and experience unmoral or socially unacceptable behaviors in terms of (interaction with) dirty or filthy objects. However, based on discourse data from psychotherapy I claim that this traditional account only addresses one dimension of stains, that is, their tendency to be perceived as dirt, and thereby misses their status as traces (or signs). In the analyses of psychotherapy data, it is demonstrated that the source domain of the stain metaphor also entails a metonymic dimension based on a relation of contiguity between the stain and the actions leading to the stain. Within this EFFECT FOR CAUSE metonymy (Radden and Kövecses 1999, Littlemore 2015) "stain" can be seen as an effect of the actions that has caused it. Thus, the use of this metaphor points to a conceptualization involving a causal correspondence between 1) our experience of physical contact with filthy objects or entities leading to stains and spots constituting the structure of the source domain; 2) social experiences in which problematic actions or unmoral behavior may lead to an impaired social reputation constituting the structure of the target domain. This also means that 3) the temporal dimensions of stains are mapped onto the severity of an impaired social reputation. A stain is like a mark, it does not go away. This aspect of permanency contributes to the highly negative connotation of "stain" in the sense that the difficulties in removing stains and spots in the physical realm are akin to the challenge of repairing a damaged social reputation – and the other way round as well, the irreversibility of certain actions as similar to unremovable stains.

Thus, the inherent metonymic (or indexical) structure in the source domain of the stain metaphor affords an easy and direct understanding of connections between actions/incidents in the past and their present consequences. In a single expression the metaphor constrains our attention by offering a simple causality in relation to the social effects of past actions.

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Plastic hearts: The emotional impact of multimodal metaphor about the ocean plastic crisis and perceptions of how to address it

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A recent corpus study shows that multimodal metaphtonymy is a frequent pattern of conceptual interaction found in non-commercial environmental awareness campaigns and primarily serves to highlight the negative effects of issues such as climate change and plastic pollution (Hidalgo-Downing & O'Dowd, 2021). In the data, the authors found that visual and multimodal metonymies depicting threatening entities (e.g. weapons, traps) and dangerous events (e.g. nuclear explosions, natural disasters) provide conceptual access to broader metaphorical messages which compare, for example, plastic pollution to a trap, or climate change to war. These metaphtonymies effectively encapsulate the rhetorical messages underpinning the campaigns by evoking complex arguments in concise and relatable ways for the audience. In research on metaphorical framing effects, studies have traditionally focused on linguistic metaphors in verbal contexts and excluded multimodal contexts (Flusberg et al., 2017; Steen et al., 2014; Thibodeau & Boroditsky, 2011, 2013). Although some recent framing studies have integrated a multimodal element (Flusberg et al., 2020; Hart, 2018), none have investigated the framing effects of metaphor in contexts which exploit language-image relations in creative ways, or which involve creative patterns of conceptual interaction such as metaphtonymy. Similarly, recent research on multimodal advertising and audience responses tends to concentrate on commercial advertising, which generally highlights the positive values of products and evokes pleasant emotions in the audience (Pérez Sobrino et al., 2021; Pérez-Sobrino & Littlemore, 2020). By contrast, this paper asks what role does multimodal metaphtonymy play in the activation of negative emotions towards the issue of plastic pollution in non-commercial ads? How are these emotions characterised? How do they compare between two different multimodal contexts frequently found in the genre, namely a) PLASTIC POLLUTION IS WAR ON NATURE and b) plastic as having conflated with nature? And do these figurative operations also engender a framing effect, as seen in previous studies on linguistic metaphor? The study design follows (Hendricks et al., 2018) and consists of a two-part experimental survey. The first section quantitatively tests for metaphor framing effects; the second consists of free-text response questions designed to gather qualitative data of emotional responses. The study aims to contribute to understanding how individuals emotionally engage with the plastic crisis and to probe the relationship between conceptual construal, reasoning, and emotional response for multimodal, environmental crisis discourse.

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The cognitive grounding of metaphorical amalgams and metaphor-like figures of speech in the EFFECT FOR CAUSE metonymy

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The EFFECT FOR CAUSE metonymy has been observed to underlie some cases of *hypallage* or transferred epithet (Ruiz de Mendoza, 2020: 29). For example, *a slow road* is one whose conditions cause traffic to be slow (Koveces and Radden, 1998: 56). A special case of this metonymy is RESULT FOR ACTION (Panther and Thornburg, 2000), which motivates constructions requiring some implicit action (e.g., *How to be rich in a week* 'How to act to become rich in a week').

In this presentation we argue that EFFECT FOR CAUSE can also play a supportive role in other analytically more complex situations involving metaphorical amalgams and metaphor-like figurative language (e.g., synesthesia). For example, the metaphor *Death is a thief*, which personifies death, results from building LIFE IS A POSSESSION into (CAUSING) THE END OF A STATE IS (CAUSING) A LOSS. This amalgam is possible through the activity of the EFFECT FOR CAUSE metonymy, which allows us to see death as both an effect and an agentive cause (Fig. 1).
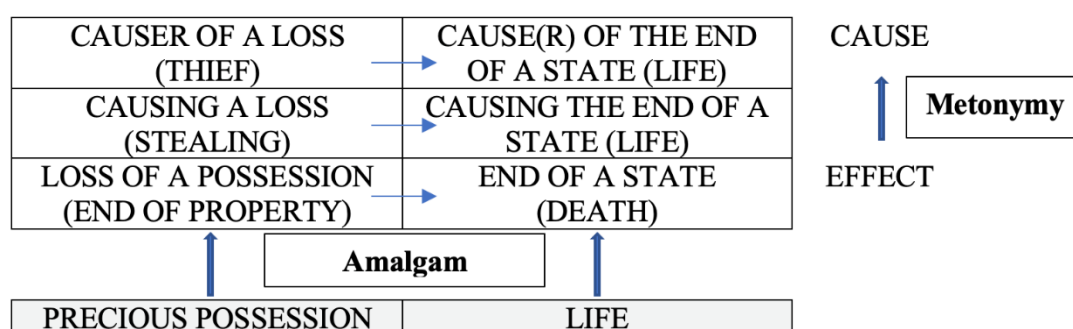

Fig. 1. *Death is a thief*

In another analytical situation, the expression *My boss is a pig* ('oppressive') results from combining the self-standing metaphors PEOPLE ARE PIGS and IMMORALITY IS FILTH (Ruiz de Mendoza and Galera 2014: 97). Filthiness and immorality can raise feelings of disgust in us; such feelings can stand for their underlying causes, enabling an analogical relationship whereby a pig's filthiness can map onto a boss's abusiveness. This time the metonymy acts on both the metaphoric source and target domains since the causes are in principle unrelated and can only be brought together through their shared effects (Fig. 2).
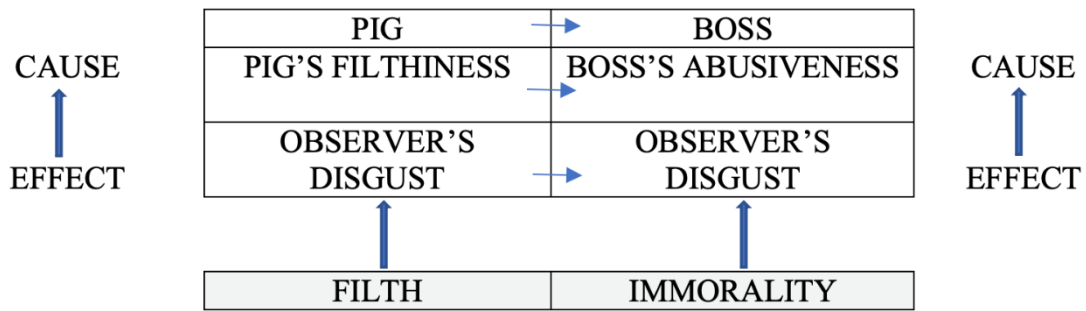
Fig. 2. *My boss is a pig*

This analytical pattern is quite close to the one found in synesthesia, where one sense is described in terms of another, as in *dull color*. Strik Lievers (2017) has argued that such examples are metaphorical. They are, since they involve mapping intensity between different sensory domains. However, there is nothing intrinsic to sound that allows us to map it onto color. The synesthesia is only possible thanks to its grounding in the EFFECT FOR CAUSE metonymy in a way similar to that of transferred epithets. Thus, the cross-sensory mapping is workable since the similarity of effects allows us to map the underlying causes: a dull color causes little impact in terms of brightness, just as a dull noise does in terms of loudness.
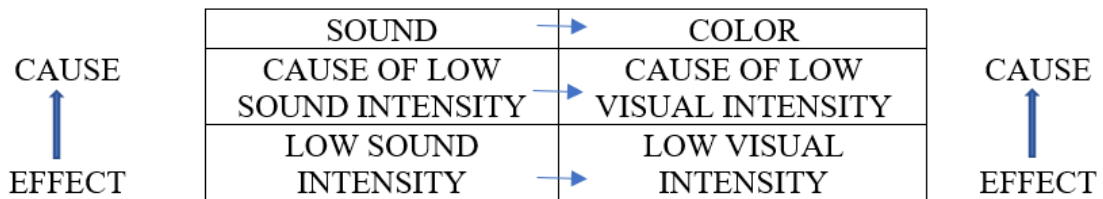

Fig. 3. *Dull color*

Other patterns are similarly examined. The analysis supports the contention that the EFFECT FOR CAUSE metonymy plays an important role in figurative language. This is possibly the result of cognitive saliency (cf. Langacker, 1993) since effects are usually easier to identify perceptually than their corresponding causes (Littlemore, 2015: 41). The resulting picture is one where this metonymy can not only motivate grammar but also act as a pre-requisite to build conceptually complex figurative expressions.

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Metaphor within metonymy

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In his 1990 article «Metaphtonymy» Louis Goossens described four types of interaction between metaphor and metonymy found in a corpus-based dictionary: 1) *metaphor from metonymy*, 2) *metonymy within metaphor*, 3) *metaphor within metonymy*, 4) *demetonymisation in a metaphorical context*. He found 1) to be frequent and 2) to be «quite current» in his material, while 3) was «extremely rare» and 4) possibly found in only one instance. Based on investigations of corpus data Deignan (2005) reports that Goossens' category 1) is frequent, but 2) is rare. 3) and 4) are not discussed in Deignan (2005) at all.

I have however identified a type of linguistic expressions which I interpret as 3) *metaphor within metonymy* in medical nomenclature, i.e., in the names of diseases. Whereas anatomical terms are easily defined ostensively, diseases are not objects at which you can point, but abstract phenomena whose delineation are frequently debated and changed (Wulff 2003). Moreover, the conceptual domain of diseases could be said to consist of the following elements or aspects: CAUSE(S), ONSET, SYMPTOM(S), COURSE, OUTCOME, PATIENT. Metonymy is often involved in the naming of diseases, enabling one salient and/or directly observable aspect of the disease to refer to the whole disease (or the patient, cf. Langacker's (1999:199) example "*The {vasectomy/herniated disk} in room 304 needs a sleeping pill*. [one nurse to another in a hospital]"). This applies to somatic as well as psychiatric diseases, for example yellow fever, which is a viral disease that can cause fever and jaundice (yellow discolouring of the skin), diabetes mellitus (literally 'excessive discharge of sweet urine'), which is a disease that causes frequent urination and high levels of sugar in the blood and urine, and multiple sclerosis, which is a disease that causes multiple sclerosis (scar tissue) in the central nervous system. Some of these PART FOR WHOLE-metonymies contain metaphors, for example compounds containing *cancer* 'crab', which is an image metaphor and *delirium* 'deviate from the furrow', which is a STATE IS LOCATION-metaphor. It could be that Goossens' type 3) is not so "extremely rare" after all, at least not in terminologies.

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From concrete to abstract and back again

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Cognitive linguists have long argued that our understanding of abstract concepts is grounded in metaphoric or metonymic mappings from more concrete or familiar domains of experience (Lakoff and Johnson 1980/2008, Lakoff and Johnson 1999). The relation between the abstract concepts of reality and insanity in sentence 1 is a case in point. It is understood as *a line* that *blurs into another* abstract concept, that is, *into nothingness* (i.e., into 'the quality or state of being nothing').

1. … the line between reality and insanity blurs into nothin,gness. (COCA, our emphasis)

Uses such as these are in line with understanding abstract concepts (a relation) as concrete ones (a line), MOTION as CHANGE, and abstract concepts (nothingness) as bounded entities that something can develop into. In 2, however, *nothingness* is not used in reference to an abstract concept, but to a space that a flashlight drops into:

2. Her feet dangled in the air over the dark emptiness below, *her flashlight dropping into nothingness*. (COCA, our emphasis)

Sentences such as this one show that abstract concepts may also be used as sources in metaphorical or metonymic conceptualizations. Here the abstract concept of nothingness provides information on the quality of the space that the flashlight drops into. This use is structured in line with a PERCEIVED QUALITY OF SPACE FOR SPACE metonymy. But when are abstract concepts targets and when are they sources of conceptual mappings? And which mapping is used when?

This paper deals with a semantic analysis of the usage patterns of abstract nouns that collocate with the preposition *into*. It is based on data from the Corpus of Contemporary American English (Davies 2008) (COCA, Davies, 2008) and a previous study of the 100 most frequent nouns that collocate with *into*. The aim is to map out the metaphoric and metonymic mappings that structure *into* + abstract noun constructions and to gain a better understanding of the mappings structuring these uses. Results suggest that CONCRETE TO ABSTRACT mappings tend to be metaphoric and that ABSTRACT to CONCRETE mappings tend to be metonymic PROPERTY, STATE OR QUALITY FOR PLACE metonymies.

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Workshop: Exploring normativity in language and linguistics: Updates and further developments

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Our theme session focuses on the philosophy and methodology of linguistics, taking as its inspiration and point of departure the recent collected volume Normativity in Language and Linguistics (Mäkilähde, Leppänen & Itkonen (eds.) 2019). The chapters in the volume set out to further our understanding of the nature of both language and linguistics, arguing in favour of what might be called the 'conventionalist' position in the philosophy of linguistics, namely that although language is a multifaceted phenomenon, having for example mental and physical aspects, its defining character is its social aspect. In other words, language is seen above all as a social institution, something shared by its speakers, intersubjective, and so forth. More specifically, the chapters focused on the role of norms and normativity in language and linguistics, covering both general ontological and epistemological issues – what kind of entities norms of language are and how they are known – as well as issues pertaining to specific sub-fields of linguistics or particular linguistic phenomena.

The papers in this theme session advance the discussion further by developing the themes covered in the chapters of the volume. Each talk is connected to one of the chapters, presenting an updated version of an earlier argument, focusing on and further developing one particular aspect of the earlier discussion, or overlapping in some other way with the earlier work. The individual papers cover issues relating to both the nature of norms themselves as well as the methodological implications of the normative nature of language, including for example the relationship between normativity and creativity, the relationship between normativity and vague language, and the methodological roles of intuition and observation. Our aim is to provide insights into the placement of language within the domains of culture, cognition and the physical world, thus furthering our understanding of what kind of an entity language is as well as what kind of a science linguistics is. Regardless of one's disciplinary background or interest in the philosophy of linguistics, these are fundamental questions central to the work of every linguist.

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Norms and normativity: A brief introduction

Aleksi Mäkilähde, University of Helsinki
Esa Itkonen

The aim of our paper is to set the stage for the whole theme session by introducing the concepts of *norm* and *normativity* and discussing the roles they play in language and in linguistics (see Mäkilähde, Leppänen & Itkonen 2019). We begin with a characterisation of norms in general, followed by a discussion of various types of norms (cf. e.g. von Wright 1963; Brennan et al. 2013). We focus on two dimensions of normativity which are particularly relevant for linguistics, *correctness* and *rationality*, together with their corresponding norm types, *norms of correctness* and *norms of rationality* (or 'rules' and 'rationality principles'). Norms such as these are not mental or physical but *social* entities (although their internalizations by language users are mental entities), and the language users' knowledge of their content is ultimately based on *intuition* (and not on sense-perception). These basic facts have considerable methodological implications, which are discussed in detail in our paper. The two types of norms mentioned above play distinct roles in the various fields of linguistics (Itkonen 1978; 1983); these are illustrated at the end of our talk through an overview of the chapters in the volume *Normativity in Language and Linguistics*, thus providing additional background for the rest of the papers in the theme session.

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Language norms we live by

Jordan Zlatev, University of Lund
Johan Blomberg, University of Lund

Language norms are a particular kind of social norms, namely those that regulate human verbal communication. From a phenomenological perspective (Zlatev & Blomberg, 2019), language norms can be said to constitute an indispensable domain of the pan-human life world (i.e., everything that human beings experience), and as such a central object of study for general linguistics. Since languages and cultures obviously differ, language norms are also central for specific human home worlds, and thus key for the study of individual languages, as well as for anthropological and ethnographic studies of their respective cultures (e.g. Everett 2005).

Still, the phenomenon of language norms remains controversial, ranging from views that equate languages with their corresponding norms (Itkonen, 2008) to those that deny them completely, or recognize them only as more or less artificial "prescriptions" attempting to contain the fluidity of spontaneous languaging, or at most as second-order constructs made up by linguists (Cowley, 2009). We propose that this huge variety of views is due to (a) confusions about what the term "language norms" refers to and (b) the inherent difficulty of spelling out the nature of language norms in explicit, propositional terms (i.e. those of a natural or artificial language).

Starting from the latter, like much in human (bodily) experience, language norms cannot be fully represented by propositional structures, since they are lived or inhabited, rather than known in the manner of perceptual or abstract objects. In other words, the type of intentionality through which they are made manifest is *operative*, rather than perceptual, reflective, or some even higher, semiotically mediated form of intentionality (Merleau-Ponty 1962; Zlatev, 2018). In this respect (though not in others) language norms are like bodily habits, with their visceral normativity (e.g., how "right" it feels to sit or move in one way, as opposed to another). This implies that language norms cannot be known through intuition, which (on any definition) requires a clear, transparent relation between the mind and its object (Sokolowski 2000). What the most basic kind of language intuitions, the *categorial* kind, do have access to are the *breaches* of norms, as abundantly illustrated by all "ungrammatical", "inappropriate" or "unacceptable" utterances that are used in the literature in order to individuate one type of language norm or another: phonological, semantic, grammatical, pragmatic, sociolinguistic etc.

We illustrate with examples and conclude optimistically that if our argument is to be accepted, then language norms would become a less mysterious and less controversial phenomenon and object of study for linguistics.

Good vagueness, bad vagueness: Linguistic normativity meets talk-in-interaction

Tapani Möttönen, University of Helsinki
Jordan Zlatev, University of Lund

As established by proponents of linguistic normativity (Coseriu 1985; Itkonen 1978), language norms are not restricted to those of well-formedness but also to language use, including both expression and meaning, thus interpenetrating practically all aspects of language. For example, Coseriu describes how language use (i.e. *energeia*) gives rise to, and builds on, norms on three different levels: universal (common to all languages), historical (specific to a particular language), and individual or situated (specific to certain situations, genres or contexts). Building on this, but taking a more phenomenological perspective on normativity, the Motivation & Sedimentation Model (MSM, Zlatev & Blomberg 2019; Devylder & Zlatev 2020) explains how the norms that pertain to these different levels stem from different facets of human pre-verbal experience and language use. Through the process of sedimentation norms are established as resources that in turn motivate future instances of use. MSM consequently predicts that linguistic norms exhibit substantial amount of dynamism and variation, being overridable by the inherent creativity of actual language use.

In this talk, we apply MSM to an aspect of language use where dynamism and variation are particularly present: *vague language*. This notion covers types of linguistic expressions which imply that there is more meaning intended than what explicitly mentioned (e.g. extenders such as *and so forth*). As a prominent feature of talk-in-interaction, vague language also covers general non-precision, e.g. lexical choice, ellipsis and elliptical combination of constructions, which emphasize the interlocutors' ability to rely on the context and non-linguistic communication. By analysing examples from Finnish institutional talk-in-interaction, we show that vague language in this sense involves normativity on the situated level of communication. On the one hand, vague language may allow the establishment of *sufficiently* shared meanings in the interaction (cf. Linell & Lindström 2016). Due to the fact that language norms never determine but only constrain and motivate language use, interlocutors may interpret expressions in principle in multiple ways as long as the interpretations result in efforts that are constructive for the overall task at hand. Hence, this is a case of "good vagueness". On the other hand, the interlocutors may entertain or develop, through the ongoing discussion, *insufficiently* shared meanings, which in turn may result in misunderstandings or overt disagreements of how certain expressions should be used: e.g. "military operation" vs. "war" or even "massacre". This is a case of "bad vagueness". We illustrate examples of each from a corpus of video recorded planning meetings by a service design team in a multinational consulting company.

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Why normativity of language does not rule out creativity

Mikko Laasanen

According to Voloshinov (1986 [1973]: 53–54), the Saussurean linguistic theory views languages as readymade normative systems that the individual must accept and acquire in their entirety. As a result, communication turns into reproduction of the system, correctness becomes the main linguistic criteria and any kind of meaningful language creativity on the speaker's part becomes impossible.

There are several errors in Voloshinov's reasoning. First speakers do not acquire systems; this mistake is a result of a failure to separate *langue* at the ontological and at the methodological level (Laasanen 2019: 165–168). Second speakers do not acquire anything in their entirety but in degrees (Andringa & Dąbrowska 2019). Third communication reproduces but also ultimately changes the system. Fourth correctness is essential to successful communication, but it is balanced by rationality. And finally normativity of language does not preclude creativity. This becomes clear when we acknowledge that creativity does not refer to Chomskyan "completely novel sentences" (see e.g. Chomsky 1968: 10), but to the potentiality of the language "system" manifested in analogical reasoning.

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The pervasiveness of normativity in language use: A focus on code-switching

Aleksi Mäkilähde, University of Helsinki

In this paper, I set out to illustrate the pervasiveness of normativity in language use, using the phenomenon of code-switching (CS) as an example. The talk draws from two previous studies in which I have discussed certain methodological aspects of different types of CS research. In Mäkilähde (2019b), I focused on grammatical research on CS, taking as my starting point the lack of consensus over central methodological questions in this field (see e.g. Poplack 2015). My goal was to establish common ground for researchers by analysing the nature of CS in terms of the concepts of *norm* and *normativity* and discussing a number of methodological implications of this analysis. In particular, I argued in favour of a synthesis between the use of intuition and observation (cf. Itkonen 2005) on the one hand, and between the roles of correctness and rationality on the other, illustrating these by way of the analogy between languages and games.

In another study, Mäkilähde (2019a), I focused on the pragmatic explanation of CS behaviour, developing a suitable approach for this purpose and presenting a metatheoretical analysis of my approach. In this case, too, normativity played an integral role in the framework, mainly through the dimension of rationality and the related notion of *rational explanation*. Throughout my analyses, there were, however, a number of additional instances where the notions of norm and normativity played an integral role: in discussing the distinction between CS and borrowing, in interpreting Gumperz's (1982) concepts of *situational* and *metaphorical* CS, in characterising the nature of *politeness*, and in employing several different types of norms as explanatory principles for linguistic behaviour. My aim in this paper is, consequently, to demonstrate both how normativity pervades linguistic behaviour and how the relevant concepts mentioned here can be fruitfully applied as analytic tools. Although I focus on CS, the general argument applies to a wide variety of linguistic behaviour.

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When does description coincide with its subject matter?

Esa Itkonen

Confusing description with its subject matter is, in principle, one of the worst methodological sins (cf. Itkonen 2019a: 32-33). Still, there are situations, even very important ones, where this general norm has to be broken.

First, it is the **axiom of hermeneutics** that no adequate human-science description can be achieved unless, as a precondition, the distinction is temporarily obliterated between those who do the describing and those who are being described: "The interactional character of sociological [or linguistic] research brings out the general truth that one cannot understand someone else without the possibility of being understood by the latter in return" (Itkonen 1978: 27). "One can acquire the atheoretical knowledge of a community only by, in a sense, identifying oneself with its members" (op. cit., p. 204; more recently, Itkonen 2019b: 443-444, 457).

Second, the idea of **universal Turing machine** is literally, and not only metaphorically, based on erasing the distinction at issue. The T-machine, qua computer prototype, is an imaginary device defined by three distinct 2-place functions with the same pair of arguments; these are $q\text{-}i$ (= an internal state of the machine) and $s\text{-}j$ (= a symbol that the machine reads on a tape). Given these arguments, the 'state transition function' Q yields the value $q\text{-}ij$ (i.e. the machine enters a new state); the 'output function' S yields the value $s\text{-}ij$ (i.e. the machine prints a new symbol); the 'movement function' D yields the value $d\text{-}ij$ (i.e. the machine moves either to the right or to the left, or stops). There is an indefinite number of possible T-machines, because every problem that has an algorithmic solution must have its own T-machine (or several equivalent machines) (cf. Itkonen 1983: 287-292, 1996: 58-60). But there is **one** machine that can do anything that all the others do. How is this possible? What is the trick of this 'universal' machine (= UT-machine)? The trick is to put all T-descriptions $Q\&S\&D$ on a tape side by side with the T-subject matter $s\text{-}j$, thus effectively erasing the distinction between the two. Just as T-descriptions remain hidden in connection with T-machines, so the new (and much more complicated) UT-description remains hidden in connection with the UT-machine. It goes without saying that the UT-machine does, and must do, whatever T-machines do, because it incorporates their descriptions as its data. The details can be ignored in this context (cf. Minsky 1972: 137-143).

Once again, one cannot help marveling at the enormous power of **analogy**. Just look how it brings together the opposite poles of scientific thinking: the core of 'soft' hermeneutics, on the one hand, and the core of 'hard' computer science, on the other.

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How do we know the meanings of adjectives: by (conceptual) intuition or by (contextual) observation? (And if by both, which one is primary?)

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Esa Itkonen

The distinction between categorematic and syncategorematic terms was already established in ancient Greek grammar. The former designate self-sufficient entities while the latter need other terms to constitute (or to be part of) meaningful units. Logical connectives (*and*, *or*, *if – then*) are prototypical examples of syncategorematic terms, contrasted with sentences (or 'propositions') which they connect with one another. Today the contextualist view of meaning is upheld by the usage-based cognitive linguistics (and by the congenial type of corpus linguistics). This amounts, in effect, to generalizing the syncategorematic view to **all** lexical units.

In our talk, we shall raise the following question: To what extent have adjectives intrinsic meanings, and to what extent are their meanings determined by the words they qualify? Or, more briefly: To what extent are adjectives syncategorematic? Answering these questions will also, by implication, answer the question that figures in the title of our talk. Our data consists of 760 non-derived Finnish adjectives. It is analyzed by means of multiple methods, concentrating on such semantic domains as "physical dimension" and "physical property".

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Why Etiological Analysis is Essential to Grammatical Theory

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What I have elsewhere (Kac 1987, 1992, 2019) called ETIOLOGICAL ANALYSIS ('e.a.') is built into the concept of normativity insofar as contranormative behavior is always so in a specific way: one driver is ticketed for, e.g., exceeding the speed limit, another for being in the wrong lane; this player is called for holding, that one for unnecessary roughness; Alice reasons fallaciously by deriving P from $\{P \circledR Q, Q\}$, Bob by deriving $-Q$ from $\{P \circledR Q, -P\}$. Indeed, it is precisely such behaviors as those named above which tell us that there ARE norms in the first place.

It follows that if the grammar of a language is a normative system and that grammatical analysis amounts to identifying the norms constitutive thereof, then e.a. is necessarily part of the package. To say this, moreover, seems uncontroversial insofar as we routinely make statements to the effect that, e.g., in *She are here the verb fails to agree with the Subject, in *Her are here the Subject is in the wrong case, and in *Her be here a main clause has failed to be supplied with a finite verb. My experience suggests, however, that this seemingly obvious idea is widely regarded as either (a) wrong, or (b) irrelevant to the central concerns of grammatical analysis. I will in this paper consider both of the foregoing views and their implications.

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Workshop: The role of social interaction in abstract concept formation and abstract words use

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Abstraction has been studied for years in the context of individual cognition: the individual mind's capacity to classify, find new relations and generalize along new dimensions. However, the fact that the human environment from the earliest moments is a social environment, and that first experiences arise in our engagements with others, raise questions about what exactly is the reality that gives rise to conceptual knowledge, what are the „basic" perceptual data, and what are the processes that enable or facilitate emergence of concepts. It seems that knowledge about physical objects and the individual mental processes, which were for decades the primary target of research on concepts in cognitive psychology, are only part of the story.

Recent research points to the importance of social interaction in forming and stabilizing abstract concepts (Thompson et al., 2020; Borghi et al., 2018; Levinson & Enfield, 2020) and - in turn - the role of concepts in forming and guiding social interactions. However, a common language for talking about such relations between concepts and embodied interactions and an integrated methodology for research are still in the making. The session we propose aims at contributing to the development of such common ground by presenting theoretical work and empirical research on the role social factors in the emergence of abstract concepts. On the theoretical level, we ask very basic questions such as if abstract concepts have to be grounded at all and how much their use and understanding relies on language (Winter), how individual experiences can be shared and integrated in dialogues to form abstractions (Tylen), how attention to social relations and first person experience might question the concreteabstract division (Rączaszek-Leonardi and Zubek) and whether the phenomenon of abstractness is a purely semantic one or if it concerns the topology of relations as well (Jastrzębski)

The empirical work within the session shows that dialogical negotiations lead to more useful abstractions (Tylen), that dimensions of abstraction might be a useful way to think about individual creativity (Kuczma) and that understanding cultural forces shaping seemingly simple concepts, such as „gender" might lead to recognizing its highly constructed and abstract nature and at the same time point to the methods of studying how it is embodied and instilled in everyday interactions (Nagórska et al.).

The general hope for the session is to strike a debate on the uniformity of concepts on the one hand and the general principles that lead to their emergence on the other.

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Dialogue and abstraction

Kristian Tylén, Aarhus University

Abstraction is fundamental to human categorization, allowing our cognitive system to group varied experiences as tokens of the same abstract type. This makes our categories resilient to noise and enables us to respond cleverly to novel experiences in an uncertain or dynamically changing environment due to their higher order similarities or analogies (i.e. their family resemblances) to known entities (Medin, Wattenmaker, & Hampson, 1987). Abstraction processes are often portrayed as generalizations across accumulated experiences in the mind of an individual, allowing representations to transfer and apply more flexibly to new or changing contexts (Gentner, 1983; Gentner & Medina, 1998; Loewenstein et al., 1999; Perkins & Salomon, 1992). We suggest that a similar, but socially distributed cognitive process can unfold in contexts of dialogical social interaction (Fusaroli, Gangopadhyay, & Tylén, 2014; Schwartz, 1995; Tylén, Fusaroli, Smith, & Arnoldi, 2020). Here, abstract representations are the product of generalization across experiences of different individuals dialogically sharing their introspections, and emerge to accommodate the summed variance of individual perspectives. In other words, we argue that social interaction stimulates cognitive processes of abstraction at the level of the group. In the presentation, I will discuss finding from a series of experiments where individuals and groups solve complex rule-based categorization tasks. It is found that groups - through dialogical negotiation - are more likely to form abstract problem representations that facilitate task performance and transfer better to new task contexts.

Do abstract concepts have to be grounded in anything other than language?

Bodo Winter, University of Birmingham

Abstract concepts are generally seen as a challenge for embodied theories of language and cognition: given that concepts such as 'freedom' and 'democracy' seem to have very little concrete perceptual content, how could these concepts be understood using 'embodied' processes such as perceptual simulation? In response to this challenge, researchers have proposed that abstract concepts are grounded in multiple different representations, including simulated situational knowledge, interoception, affective representations, and more. In this talk I want to push back against the notion that abstract concepts have to be grounded. Instead, I want to propose that abstract concepts are perhaps a challenge that embodied theories can ignore, i.e., abstract concepts may simply be out of the purview of embodied theories. I will argue that the research agenda to seek for the grounding of abstract concepts is at least partially rooted in a widespread misunderstanding of Harnad's symbol grounding problem, which is often misconstrued as saying that all concepts have to be grounded in perceptual processes, whereas in fact all the symbol grounding problem entails is that some concepts have to be grounded (Harnad, 1990). Abstract concepts may be amongst those many concepts (Vincent-Lamarre et al., 2016) that are not grounded in anything other than connections to other linguistically represented symbols. I will use empirical shortcomings of one specific proposal of the grounding of abstract concepts — the idea that abstract concepts are grounded in affective representations (Kousta et al., 2011; Vigliocco et al., 2014; Ponari et al., 2018) — as a testbed to explore the limitations of any one approach that seeks to ground abstract concepts in anything other than language. I will conclude by defending an 'embodiment on demand' view, where embodied effects such as perceptual simulations only play a strong role when the context is highly concrete, and in particular if speakers or signers use highly iconic words or signs to invite their interlocutors to simulate. Within this 'embodiment on demand' view, symbolic processing with linguistic representations takes center stage, and the 'embodied' process of perceptual simulation merely assumes a subsidiary role when speakers/signers refer to perceptual things and care about communicating perceptual detail in a vivid fashion.

Ecological and enactive take of concepts as built on relations in a social environment

Joanna Rączaszek-Leonardi, University of Warsaw
Julian Zubek, University of Warsaw

The dominance of the information processing paradigm in cognitive psychological research on concepts brought with it a heavy emphasis on „objectively available" (most often visual) information as entry „data" for knowledge structures. This has been strengthened by the cognitive science's attempts to develop artificial systems, which can perform various classifications. Yet the recent ecological turn points to the fundamentally relational character of what is perceivable, that is, agent- and action-dependent properties. What is equally important, this relational nature brings forward the importance of the first-person experience, which accompanies any perception of what the environment affords. We would like to use these tenets, together with a constatation that our environments are predominantly social, especially in the early stages of development, to reflect on the concept of abstractness itself. In line with research on early objects perception (de Barbaro et al., 2013) and participatory object perception (di Paolo, 2016), we ask if perhaps what we conceive as simple, concrete objects, aren't in fact more abstract than our first-person experiences in social situations: can, for example, a „bottle" be considered an abstract concept and „agency" a concrete one?

Modelling abstractness as a topological feature

Borys Jastrzębski, University of Warsaw

Abstractness and concreteness are usually conceptualised as purely semantic features of a concept. Although intuitive, this approach severely limits the analytical power of the above dimensions. Understood as primitives, they need to be measured experimentally for each new concept and pose a critical challenge to the assessment of word compounds or sentences where there are no ground rules for estimating combined abstractness. From the theoretical standpoint, abstractness as a semantic primitive threatens the compatibility of abstractness research with the dynamical systems view of linguistic meaning and interactions. Abstract vs. concrete concepts understood prima facie concern the ontology of the object they describe and thus evoke the mapping metaphor of reference rather than analysing the interplay of constraints that the concepts place on interactions. In this contribution, I will propose an exploratory relation-based approach to conceptualising the dimensions of abstractness and concreteness based on the previously developed framework of meaning as networks of constraints (Jastrzębski & Rączaszek-Leonardi 2022, manuscript). Rather than treating them as semantic primitives, I will offer a possible analysis of the positions the relevant concepts take in qualitative constraints networks. If consistent, it would suggest a topology-based account of abstract and concrete objects with the hope of addressing the theoretical and practical issues of a purely semantic view of abstractness.

Abstraction in divergent thinking

Urszula Kuczma, University of Warsaw
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Divergent thinking, a process of spontaneous generation of ideas based on exploration of possibilities, is believed to be based on the ability to create remote semantic associations (Wang et al. 2018). In a form of exploratory research we tested whether these associations might be tightly connected to the process of generalization, feature extraction and abstraction in general. The key aspects were distant associations, regarded as long semantic jumps between domains. With the hypothesis that there might be an underlying dimension for each pair of associated concepts along which these associations are aligned, we investigated these dimensions as forms of abstraction. The associative dimensions potentially linking concepts vary from context to context and are possibly not reducible to an exhaustive list. The associations were analyzed in the form of a qualitative experiment based on a verbal fluency task and interview with subjects. Subjects analyzed their own chain of thoughts commenting on what triggered their associations. The process revealed interesting insights into the mutli-dimensionality of the associations and the strategies to realize the task and also opened up a discussion about the place of abstraction within these dimensions. We would like to present the outcomes of this exploratory research and the functional aspect of abstraction in regard to divergent thinking.

Embodying gender/sex in interaction dynamics: patterns of early speech and vocalization by mothers and infants

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During the last twenty years, the concepts of gender and sex have been thoroughly discussed, and the difficulty in separating these notions has been brought upon general attention (cf. Fausto-Sterling, 2019), resulting in increased popularity of the unifying term of "gender/sex" (van Anders and Dunn, 2009). The notion of "gender/sex" contains, amongst others, one's identity or role, physicality & physiology. The multifacetedness of gender/sex is especially visible in early infancy and childhood (from birth to 36 months), when the child develops quickly in all areas (for detailed description, see Fausto-Sterling, 2021). During this period, the children are also experiencing first interactions with others, which shape the way they think about themselves and the world. In this preliminary study, we treat gender/sex as a concept arising due to a constellation of relations which are enacted with the child from the earliest moments of life. Sequences and timings of the vocal contributions have been also shown as dictated by values preserved in interaction, such as mutual interest and respect (Rączaszek-Leonardi & Nomikou, 2015). As shown by Nomikou et al. (2017), changing established dynamics of behaviours results in differences in the initiative/agency of the infant. We focus on how these relations concerning gender/sex are instilled in the vocal layer and speech in several aspects: semantics, relative timing and qualities of vocalizations, both by mother and the child. We will present results obtained by qualitative analyses of dyadic speech, as well as compare the dynamical profiles of interactions.

Concepts in conversation: behaviour coordination and role of effector for different kinds of concepts

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Humans have an ability to create and use abstract concepts unparalleled in the animal kingdom. While there is no direct opposition between abstract and concrete concepts, they vary along many dimensions: the first are typically less imageable, more detached from the five senses, more variable across contexts and participants and evoke more interoception (Villani et al., 2019). Crucial for us is the fact that they score higher in social metacognition, feeling that others can help us in understanding word meaning (Borghi et al., 2019).

Other authors have also proposed that the metacognitive awareness of the inadequacy of our knowledge might lead to relying more on other people (Shea, 2019).

A recent study supports this hypothesis, showing that participants' movement is more synchronous with an experimenter when they have to guess the abstract, rather than the concrete concept to which an image refers (Fini et al., 2021).

Drawing from these works, we hypothesise that abstract concepts elicit cooperation. We devised an experimental task in which dyads were presented with concrete and abstract concepts belonging to different kinds, and were required to arrive at common definitions of abstract and concrete concepts through natural conversations. Additionally, we explore the notion that different clusters of abstract concepts (philosophical-spiritual, self-sociality, emotive, and physical-spatiotemporal-quantitative) may vary in eliciting cooperation.

Cooperation within the pair was operationalized by coordination on multiple timescales and measured using recurrence quantification analysis of the time series acquired through tracking the participants' movements during their interaction. We expect that conversations concerning concrete and abstract concepts are characterised by different coordination patterns. We will present preliminary results of the experiments carried out in both Italy and Poland, and propose further steps for research on abstract concepts and prosocial behaviour.

Language and types of abstract concepts: A dual-task interference study

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Many researchers have suggested that the processing of abstract concepts depends on language, with a recent study (Villani et al., 2019) arguing that some abstract concepts could be more reliant on language than others. In this preregistered study (https://osf.io/rvjgw), we tested the role of language in the processing of different categories of abstract concepts by having participants solve odd-one-out problems while engaging in either verbal or visuospatial secondary interference tasks. For each odd-one-out trial, participants saw three images depicting abstract or concrete concepts and were asked to select the one that did not depict the same concept as the other two. We conducted the study online. In the main part of the experiment, we asked participants to alternate between odd-one-out abstract concept trials and 1-back matching verbal or visuospatial interference trials. We also include a control condition with no interference. We predicted that abstract concept processing would be slower and less accurate in the verbal interference condition. In contrast to our predictions, processing of abstract concepts appeared *faster* and less accurate under both verbal and visuospatial interference compared to the control condition. Performance under verbal interference was also faster than under visuospatial interference – this was, however, not the case for processing of concrete concepts where visuospatial interference was associated with the fastest reaction times. We have two potential explanations for the unexpected results. First, it could be the case that verbal recoding (the path from image to verbal label) takes time and that verbal interference prevents participants from recoding across modalities. This would be consistent with faster but less accurate odd-one-out decisions under verbal interference. With concrete concepts, the images are more visually similar so verbal recoding may not be necessary. Consistently with this idea, reaction times were also faster the higher words scored in social metacognition, i.e. the more people evaluated they needed others to understand word meaning. Second, previous research using dual-task interference (see Nedergaard, Wallentin, & Lupyan, 2022, for a review) has found that a verbal secondary task interferes with behavioural inhibition, which may also have been the case in our experiment. This explanation fits less well with our findings regarding concrete concepts. We discuss what our results might mean with regard to the idea that language – both as it occurs internally and between people – plays an important role in the formation and negotiation of abstract concepts as well as the processing of them.

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