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Book of Abstracts



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Keynote abstracts

Social Cognition and Collective Intentionality – A Linguistic Perspective on their Evolution

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In a series of studies, Tomasello has laid out a comprehensive theory of the evolution of both human language and human cognition, and how the two are connected. Tomasello (2009) and especially (2014) explicitly defend a two-stage model that was still somewhat implicit in Tomasello (2008): The evolution of human mutualistic cooperation and communication – cooperative communication between individuals engaged in a collaborative project – preceded the evolution of group level practices of cooperation and communication: ‘public’ language and culture. Cognitively: ‘joint’ intentionality emerged first and evolved into what is essentially still its present state, which set the stage for the subsequent evolution of ‘collective’ intentionality (Tomasello 2014). An alternative scenario is that these two kinds of processes and capacities evolved ‘in tandem’: A gradual increase in the role of culture (learned patterns of behaviour) produced differences and thus competition between groups of (proto-)humans, which in turn provided selection pressures for an increased capability and motivation of individuals to engage in collaborative activities with others (Boyd & Richerson 2006; also Schulz et al. 2011).

A consequence of the two-stage view is that argumentative language use and explicit reasoning, including the use of negation and conditional constructions, are seen as belonging entirely to the second stage (Tomasello

2014: 107ff). In this view, argumentation is seen as an advanced form of language use, developed and practised in the context of public debates. However, linguistic research suggests that all language use, including basic conversation, is fundamentally argumentative, in the sense of evoking multiple viewpoints (as with the use of negation) and proposing ways of deciding between them (Verhagen 2008, 2015; cf. also Mercier & Sperber 2011). In terms of linguistic regularities, a public debate and a two party conversation do not differ, which is more to be expected in the group selection scenario than in the two-stage scenario.

Moreover, taking the public character of linguistic communication as basic provides a way of resolving a problem of infinite regress. In the ‘cascade’ of selective processes described by Hurford (2007: 304), mutualistic cooperation and reciprocal altruism require an ability of recursive mind reading – which may go on indefinitely – but the alternative scenario does not: the assumption that the cultural values of symbols (systematic patterns of communicative behaviour) are universally accessible (in the group) suffices. The scenario of cultural group selection may thus be less demanding of cognitive resources than the two-stage view. Especially the development of storytelling as a cultural practice supporting group cohesion may well have provided the basis for the evolution of recursive mind reading by providing representations of different characters’ epistemic and evaluative stances (‘viewpoints’) on the story situation (cf. Van Duijn 2016) – an instance of the idea that the emergence of novel, more complex cognition may be facilitated by relevant structure in the external environment that emerges for independent reasons (cf. Zuidema & Verhagen 2010).

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Catching Abduction at Work. On Two Instruments for Research on Abductive Reasoning

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Despite wide acceptance of the claim that abduction is a ubiquitous type of reasoning in everyday life there is no agreement as to what abduction exactly consists in and there are very few, if any, dedicated tools for carrying out empirical research on abductive reasoning. In this talk I address both these issues.

As for the first one, I advocate for the claim that abduction consists of both generation and evaluation of hypotheses. Thus it is a compound

form of reasoning, in some cases subsuming deductive or inductive reasoning.

As for the second one, I present two instruments designed for gathering data on real episodes of abductive reasoning. The first tool is based on ‘Mind Maze’ by Igrology, which is a game in which, according to the manual, a gamemaster ‘describes a strange story and the players must determine why and how the story happened’. Solution of each of the tasks is dependent on discovering key pieces of information (which are known to the gamemaster only) by asking auxiliary questions. Thus the subjects-players face an abductive problem of making sense of a puzzling fact. The original rules of ‘Mind Maze’ slightly modified, in order to allow for more cooperative behaviour of a gamemaster. Data gathered in this research form one of the parts of the Erotetic Reasoning Corpus (<https://ercorpus.wordpress.com/>). The second tool, ‘Find Out’ is set up as a game in which the subject is playing the role of an investigator for a local media outlet, whose task is to prepare a piece of news for an upcoming ‘breaking news’ edition. The study consists of three stages in which the subject is asked to perform certain reasoning activities and to document the process.

Reasoning involved in solving these tasks can be modelled by means of some extensions of situational semantics, incorporating the concepts of topic and question relevance. Interpreting the concept of topic in terms of situational semantics as a subset of the model’s universe I follow general lines proposed by Van Kuppevelt. Topics are considered w.r.t. some situational model M , which is an ordered pair $\langle U, v \rangle$ such that U is the model’s universe and v is a function assigning to each formula of the considered language a set of situations, in which this formula holds. I also employ the concept of a situational relevance model N of a topic Ω w.r.t. a model M , based on partial assignments of sets of situations to formulas. On this basis the relations of sifting and funneling for simple yes-no questions are defined, and with respect to certain situational relevance models. These relations account well for empirical data. They also allow for a comparative analysis of the ways in which different subjects solve such kind of abductive problems.

Logic of Questions in the Wild. Inferential Erotetic Logic in Information Seeking Dialogue Modelling

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The main aim of my presentation is to study the nature of dependency of questions appearing in the context of natural language dialogues. This means that I will focus on erotetic inferences whose premises and/or conclusion is a question, and on the issue of the criteria of validity of these inferences. I will focus especially on situations where the initial question is processed and an auxiliary question is asked in order to facilitate the search for an answer to the initial one.

In the first part of the talk I will analyse the data retrieved from The British National Corpus (BNC), The Basic Electricity and Electronics Corpus (BEE) and The Erotetic Reasoning Corpus (ERC) focusing on: simple yes/no vs. open questions; patterns of transitions between questions and answering patterns. I will also present a typology of different query-responses, i.e. questions provided as answers to questions (Łupkowski & Ginzburg, 2016).

The second part takes as a point of departure A. Wiśniewski's Inferential Erotetic Logic (IEL; Wiśniewski, 1995, 2013) and its tools, namely erotetic implication and erotetic search scenarios. I will use these tools to analyse the aforementioned data retrieved from the language corpora and question processing research. I show how a dialogue move, leading from one complex question to an auxiliary one, may be justified with the erotetic implication. I also demonstrate erotetic search scenarios may be used for the the analysis of broader parts of dialogues with the aim of analysing a dialogue participant's research agenda (or questioning strategy).

I will also discuss the issue of potential applications and implementation of the presented models in the field of designing empirical research on question processing (Moradlou & Ginzburg, 2014; Łupkowski & Ignaszak, 2017), developing formal dialogue systems and cooperative dialogue systems.

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Use of Parallel Texts in Cognitive Linguistic Research: The Case of Deictic Verbs in Translation

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In this talk, I will introduce the usefulness of parallel texts in Cognitive Linguistics research. Although parallel texts have been extensively used in the study of linguistic typology (which usually assumes a quantitative approach), there has not been a coherent body of literature in the study of language and thought that involves use of parallel texts. I will discuss how the methodology can reveal the usage of viewpoint operators that other methods cannot as a case in point.

Contributed talks

Music Expectation and Its Flexibility

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Music has often been compared to language. While the search for musical meaning has traditionally belonged to scholars in music theory and various branches of music philosophy (such as aesthetics and semiotics), many questions of musical communication have been taken up by the newer field of music cognition. However, the parallel between music and language, and the investigation of similarities between the two domains continue. In neuropsychology, the degree of overlap of cognitive and neural mechanisms for music and language processing remains a matter of debate. Evidence from congenital and acquired amusia (and their independence of aphasia) suggests a specialized module for music. On the contrary, some studies argue that areas in the lower frontal lobe react to violations of both music and language syntax. Research in music and language learning have many commonalities. For example, experiments on incidental learning of musical grammars have been modelled on analogous studies using language grammars. Expectation, in turn, is largely based on the implicit knowledge of syntax, learned by long-term exposure. On the other hand, experimental evidence shows that even after short exposure to an unfamiliar system, listeners can adapt their expectations to fit the new rules. Our experiments investigate the processes of long- and short-term changes in melodic expectation. The first experiment concerns melodic proximity – the tendency of tunes to consist of small steps rather than large leaps – prevalent in most music cultures

and a strong component of expectation. Subjects listened to a series of previously unknown melodies consisting of mostly small or mostly large intervals and were asked to rate possible melodic continuations in a probe-tone task. Small-interval melodies generated a preference for proximity, but for the large-interval melodies, ratings of small- and large-interval continuations were very similar. In our second experiment, we used the probe-tone method to compare expectations within two music styles, both familiar to our listeners: traditional Slovak hymns and rock songs. We used short excerpts of songs which the subjects were unable to recognize specifically and asked them to rate melodic continuations. The pattern of responses suggests that if a style is sufficiently cohesive (hymns), listeners' expectations will reflect its specific statistical properties. For highly variable styles like rock, listeners will rely on a general tonal schema rather than style-specific information.

Taste Among Senses Cross-perceptual Expressions of Coffee Flavor in Taiwan Mandarin within Cognitive Linguistics Framework

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This study aims to explore how flavor is conceptualized cross-modally in perceptions via analyzing the Taiwan Mandarin data collected from coffee cupping from the perspective of cross-modal expressions in cognitive linguistics. Except for the instinct senses of smell, taste, and flavor shared by all, the instrumental convergence of language itself seems impracticable in describing the subjective feeling, elusiveness and abstractness of flavor experiences. To convey the sensation of flavor, it is through language that our experience can be reconstructed, evaluated and told (Dyer 2011). However, the difficulty of the so-called primitive sensation (i.e., smell and taste) in language is bridged through figurative expressions like metaphors and similes. Notwithstanding, it is the expansible nature of flavor experiences that makes the contents of flavor experiences complicated but directly follow human cognitions.

Although coffee cupping involves abundant cross-modal expressions, previous studies are scarcely addressed on coffee but wine tasting, nor is the language of savoring experiences in Chinese well studied. To bridge this research gap, this study conducts a corpus-based investigation on cupping data involving 27043 words from a 10-hour recording. Based on previous flavor researches (e.g. Paradis, 2013), the study put emphasis on the following three aspects to investigate the highly context-dependent synesthetic expressions (i.e. expressions of crossmodal mappings) in coffee cupping, cross-modal metaphor (i.e. synesthetic metaphor), cross-modal metonymy (i.e. synesthetic metonymy), and cross-modal simile (i.e. synesthetic simile).

On the other hand, different from hypotheses of the previous researches, the study proposes a novel directionality of perceptual transferring in cross-modal interaction. Furthermore, by thoroughly analyzing the synesthetic forms and functions in the current study, it is hoped that the present study deepens the understanding of the emerging role of crossmodality in the context of flavor expressions through the elaboration of linguistic mechanism of flavor expressions. By analyzing flavor expressions in coffee cupping, the study turns over a new leaf in analyzing the relation between language, cognition and perception.

Could the Basis for Language Be the Reduction of Vagueness in Order to Coordinate Activity?

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We explore how we can derive various aspects of language by considering its original purpose to be the reduction of vagueness in order to coordinate activity.

Generally, in discourse, there is a remarkable agreement as to which words and sentences are spoken. Traditionally, linguists have supposed that language therefore conveys meaning through assemblies of well-defined terms. More broadly, analytic philosophy, and more specifically,

cognitive linguistics, have held such an outlook, which we argue is implausible, psychologically, phenomenologically and pragmatically. Psychologically, the unfolding sense of meaning which we experience only loosely matches the flow of words that we speak and hear. Phenomenologically, speaker and listener are quite disconnected in what they personally feel. Indeed, thinking itself is extremely vague. And, pragmatically, people need not agree on what their terms actually mean, nor know themselves, for that matter.

Cognitive linguistics has reconsidered language in terms of thinking and so has developed an understanding of cognitive frameworks. However, these frameworks are still discussed from the prevailing point of view of assembling items. Thus, Langacker (2008) considers how we may conceptualize a drinking glass as a space, shape, container, instrument, material and so on.

Instead, we suppose that the purpose of language is to coordinate activity. Thus we conceive of a world in which what is well defined are recurring activities. We pick things up and set them down; we drink liquids; we serve them to others. It is the recurring activity which determines what a 'drinking glass' might mean for us. For example, we may be told to clean the glasses in the sink but leave the plates. Thus we have an activity of distinguishing glasses from plates. The implementation of such an activity can be particular to any individual. There need be no definition of what a 'glass' is, nor what properties it has, but rather there is an activity of selecting glasses, which may lead to an ad hoc concept, or not. Architect Christopher Alexander (1979) has described how recurring activity evokes structure, and structure channels activity, yielding patterns – general 'rules of thumb' – which come together in pattern languages. We can apply his thinking to linguistics.

The goal of language then can be to reduce the general vagueness of thinking, by a variety of strategies, for the purpose of coordinating activity, old and new. This is compatible with Tomasello's (2016) concept of joint intentionality. Working together with others, we must leverage general models of intention, attention, and serving the interests of others, for example, by appreciating status, as in who submits to whom. We must punctuate our actions, much as if they were sentences. Some strategies can be most abstract, such as dividing the vagueness of our minds into two perspectives, as when distinguishing construal and con-

tent. Other strategies can be familiar to us as transformations of our own self-identity. Thus we overview strategies which help us coordinate activity and we show what they might variously ground to make language possible.

On (How to Make Sense of) Virtuallects

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Pokémon GO (PG) non-players might have a hard time making sense of PG players' observed behaviour: their staring at their phones and talking to each other seemingly about things that are actually nowhere to be seen. Yet given some plausible theoretical assumptions, they *should* also have a hard time making *semantic sense* of PG players' *language* – or so I shall argue in this talk.

I assume that, in playing Pokémon GO, PG players make-believe that certain non-linguistic facts obtain, such as the fact that something is hiding inside the local church. Moreover, they say things like

(1) I caught a jigglypuff,

whereby they also make-believelly *presuppose* that certain *words* function in certain ways. In particular, for PG players, Pokémon terms like 'jigglypuff' function just as species names (Kripke, 1980, 2013) or, more generally, paradigm terms (Nimtz, 2017) like 'tiger' function in ordinary discourse – meaning simply what they refer to, i.e., the species named *via* some original sample or paradigm instance. So PG players make-believelly presuppose (a) that 'jigglypuff' refers to the species *jigglypuff*, and so (b) that the metasemantic condition of having dubbed an original species sample 'jigglypuff' – in virtue of which the species name 'jigglypuff' means the species *jigglypuff* – is fulfilled. In playing Pokémon GO, then, PG players make-believelly presuppose, *of* the language they speak outside of the game, e.g., English, that it contains words that function differently or mean different things than they actually do. Given some

base language L and some pretence P , I call what L is, make-believedly, within P : L 's P -*Virtuallect*.

But how are Virtuallects related to their base languages? For example, how is the PG-Virtuallect related to English? Does the former contain expressions, like 'jigglypuff', which, within the pretence, are names of Pokémon species, but are meaningless outside of the pretence? Or are these expressions such that they're actually (meaningful) *pretended species names*, which actually constitute a separate semantic category (see Kripke, 2013, 29-30; 46)?

In this talk, I argue for the second route. Yet since *outside* of the PG pretence, no original species sample has been dubbed 'jigglypuff', 'jigglypuff' actually hasn't acquired any meaning in virtue of some dubbing. So we need to ask: what does 'jigglypuff' actually mean *qua* pretended species name? That is, given that, in uttering (1), a PG player p says, within the PG-Virtuallect, *that p caught a jigglypuff*, what is p saying *outside of the PG-Virtuallect*, i.e., what is a PG non-player hearing? Moreover, given that whatever is a species name N within the Virtuallect is a pretended species name $P(N)$ outside of it, and vice versa, we must ask the following metasemantic question: which came first: N or $P(N)$?

I indicate how to construe the semantic interaction between PG players and PG non-players, and thus between (i) whatever, within the PG-Virtuallect, are the meanings of what are fictionally ordinary species names, and (ii) the actual meanings of what are actually pretended species names. My hypothesis is that the PG-Virtuallect comes first, and so that what are actually pretended species names acquire their meanings from what PG players pretend. Specifically, I suggest that pretended species names are *deflector phrases* in the sense of Kracht (2015), which are complexes made of a deflector, i.e., a device to borrow another speaker's semantics, and a description. In search of this description, I draw on considerations of proponents of two-dimensional semantics (in particular, Murday (2011) and García-Carpintero (2006)). So 'jigglypuff' is a complex made of, e.g., the deflector 'whatever, in the words of a PG player, is', and a description. So despite Kripke's contention that no description is synonymous to any genuine species term, I finally argue that, in making sense of Virtuallects, *we*, being outside of the Virtuallects and having control over the content of our (virtual) fictions, including their semantics, can provide such descriptions – which must be such that, *within the*

Virtualect, but only *as seen from outside of the Virtualect*, they're synonymous to species names.

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Necessity and Formalization of Universal Sentences

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Formalization of natural language sentences is just so useful as it simplifies matters for logicians. But some simplifications might be misleading and thus play the opposite role. One such example is, I think, universal sentences, i.e., sentences of the form *S is P*. E.g: *Birch is a tree; unicorn has two horns; dogs bark*. Preferred formalization of such sentences in basic contemporary logic is by using universal quantifier, that is:

$$\forall x S(x) \rightarrow P(x)$$

Intuitively, such analysis suggests logical equivalence between two types of sentences: *S is P*, and *every S is P*. My claim is that such equivalence mostly (if not always) fails to hold.

Preferred analysis seems to work fine with the first of the examples given. But there are differences between states of affairs described by *birch is a tree* and *all birches are trees*. Taken both are true, first excludes logical possibility of there being any birches that are not trees; second does not. Consequently, first can fail to be true even when the second one holds.

The case is even more apparent with the second example. Intuitively, the sentence *unicorn has two horns* is false, since unicorns essentially have one horn. But then everyone knows that unicorns do not exist; thus, it is true, that all unicorns (for there are none) have two horns, just as it is true that they have three horns, or have no horns at all.

The third example also fails to be true on preferred analysis (though is true intuitively), since there are plenty of dogs that never bark.

My understanding here is that universal sentences are normally used in natural language as two types of claims: either that meaning of S entails property P as a strict property; or that it entails P as a typical property, allowing some discrepancies; without stating anything about particular individuals. Thus, intuitively, correct ‘translation’ of given examples would be: *birches are strictly trees*; *unicorns have strictly one horn*; *dogs normally bark*. I suggest then that universal sentences are statements not about individuals, but about concepts, and thus their analysis using universal quantifier is always misleading. Failure to recognize the difference leads us to curious cases in modal logic, in particular, theory of necessary a posteriori sentences popularized by Saul Kripke. Kripke’s proposal of formalizing statements about natural kinds using necessity operator still makes use of universal quantifier, and thus gives unwanted results for the analysis of fictional universal sentences: proposed analysis for *unicorn has two horns* would be $\Box \forall x U(x) \rightarrow H(x)$. This is a true sentence, given Kripke’s view that certain fictional beings necessarily do not exist: since necessity operator expands our domain of quantification into that of all possible worlds, and since unicorns are not in any of these, our sentence becomes true, for it is true that every unicorn in every possible world has two horns (for there are none). However, intuitively it is false.

The popular view is that we can have knowledge about a certain object that is not inherent to the meaning of the proper name of that object: such that the highest mountain on earth is located on the border

of Nepal. What I argue is not that popular opinion that it is just as possible to have similar knowledge about concepts (or properties) not intrinsic to their meaning, posing the need for different formalization of universal sentences. My suggestion addressing this need is to use simple second order logic.

Specific Concepts for Different Nations and the Ways of Their Explanations during Teaching Languages

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The presented study deals with concepts and speech expressions typical of specific nations only, which are untranslatable into other languages. Moreover, the study discusses common reasons of their formation. Alongside of that, the author touches upon language gaps. Additionally, several important, but specifically Russian expressions and concepts are being dealt with. Then we give the results of specific experiments with different concepts.

At the beginning of the presentation the author will say several words about one ancient legend (about the tower of Babel) and how it is connected with concepts and cognitive linguistics. After that we will give the basic information on scientific study of cognitive linguistics. Cognitive linguistics (CL) refers to the branch of linguistics that interprets language in terms of the concepts, sometimes universal, sometimes specific to a particular tongue, which underlies its forms. Cognitive linguistics researches the correlation between language and consciousness. This scientific study improves our understanding of foreign languages, because it explores the concepts linked to words.

A CONCEPT is an unitary element of collective knowledge / consciousness, which as a rule can have got a verbal expression and send us to high mental values, usually is also specified by ethno-cultural identity. The author will give examples of the existence of national-specific concepts. The Inuits have 7 words for the designation of the concept 'snow' and more than 100 different compositions with the same word (with any

parts of speech). The Caucasus nations have many words for the ‘horse’s wound’, because this animal plays a significant part in their everyday life. In this part of the world a horse is taken as a breadwinner. The Russians have one word-concept for the concepts such as: ‘twenty-four hours’ (*sutki*), ‘boiling water (*kipjatok*)’. These concepts are usually translated to English only by several words.

Which is the different between ‘чувствами (*chuvstvo*)’ and ‘ощущениями (*osh’ush’eniye*)’ (in English ‘feeling’ or ‘sense’), ‘истиной (*istina*)’ and ‘правдой (*pravda*)(truth)? What does it mean ‘причуда (*prichuda*)’? (*whim, freak, caprice, fancy, oddity, vagary*).

It is connected not only with the concepts, but with the facts, culture and so on. For example, the English believe, that a black cat crossing their road brings them good luck

A black cat is one of the symbols of happiness and luck. Slavonic nations firmly believe, that a black cat crossing their road can cause a disaster. It’s a very bad sign for Slavonic nations.

At the end of the presentation the author will also discuss the question of using the means of translation or a bridge language (such as English) in foreign language lessons.

2D-Conception of Inference (with an Examination of Paradoxical Reasoning)

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It is a familiar fact that deductive reasoning is presented to us as a series of (natural language) sentences $\varphi_1, \dots, \varphi_n$ which must be reconstructed, if subjected to theoretical scrutiny, as a series of arguments, where each argument’s conclusion provides a premise for consecutive argument. The unit of *inference* is argument (i.e. $\varphi_1, \dots, \varphi_n \therefore \psi$).

$$\dots \varphi_1, \dots, \varphi_n \therefore \psi_1, \dots, \psi_m \therefore \chi_1 \dots$$

It is likewise generally accepted that natural language covers the underlying logical structure; and the role of deduction systems (natural deduction, natural deduction in Fitch’s style, ...) is to exhibit it.

In the first part of my talk I address a challenge to this received view. In particular, I employ Tichý's (1988, 1999) idea that reasoning is a two-dimensional affair; call this view *2D-inference*.

Historically, 2D-inference can be traced back to Frege's criticism of Hilbert: according to Frege, the point of inferring is derivation of a (logical) truth from a set of (logical) truths; Hilbertian reasoning for assumptions, i.e. mere 'would-be truths', leads us to nowhere, since the derived 'would-be truths' are of little epistemic value. Moreover, Hilbertian 1D-conception of inference, which explains inferences as concatenated arguments, is at odds with explaining such typical reasoning procedures as *reductio ad absurdum*. (Numerous examples in literature indicate how authors try to accommodate 2D-view into their 1D-approach, though it is at the price of *ad hoc*ness.) On 2D-conception of inference, inference operates on whole arguments (i.e. $\Gamma \Rightarrow \varphi$, where Γ is a set of sentences/formulae), each being a logical truth, while the final (as well as running) conclusion is consequence of the last argument in the series.

$\dots \Gamma_1 \Rightarrow \varphi_1, \dots, \Gamma_n \Rightarrow \varphi_n \therefore \Gamma_1 \Rightarrow \psi_1, \dots, \Gamma_m \Rightarrow \psi_m \therefore \Gamma_1 \Rightarrow \chi_1, \dots$

As shown e.g. in Pezlar (2014), explanation of *reductio ad absurdum* within 2D-inference approach is quite straightforward.

For formal representation of 2D-inference a natural deduction system in Gentzen style (i.e. operating on sequents, not mere formulae) is suitable. (Such deduction systems are now widely used in computer-science-friendly formalization of natural language, cf. e.g. Ranta 1994, Francez 2015, Chatzikyriakidis and Luo 2017.) A concise sample is shown in the talk; it displays especially the way how to make explicit various submerging assumptions and also anaphoric links interconnecting pieces of the whole inference.

The plausibility of the 2D-approach to inference is conveniently demonstrated on the example of paradoxes. According to the widely adopted view by Quine (1966) (cf. also Sainsbury 1995), paradox is an argument. However, a little inspection of (say) the Liar paradox, or Fitch's knowability paradox (FP) reveals that these pieces of reasoning consist of inferences operating on arguments involved in them (even a textbook exposition of FP as a seemingly 1D-sequence of step deploys *reductio ad absurdum* while *reductio ad absurdum* has no natural explanation on standard 1D-approach to inference, as mentioned above).

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Shifting in Party Positions: Analysis of Facebook Content of the Czech SPD

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The proposed paper deals with positions of the far right party SPD in dimensions of anti-immigration, minority policy and populism and with evolution of these positions during last three years. Positions are estimated by automatic text analysis, more precisely by wordfish. This method was developed by Slapin and Proksh in 2008. Method works as a scaling technique based on statistical model of word counts. The result of the model is a single dimension of word frequencies. Method has been tested on speeches in Parliament of the EU on reliability in different languages with satisfactory results. However, it has not been used to analyze texts in czech language. This could be one of contributions of the paper. As source of text, the facebook statements written by party chairman Tomio Okamura are used. To obtain all facebook content over

last years, webscraping library for software R will be used. For analyzing each dimension, only statements containing specific keywords are used. The selected texts will be dived to groups on monthly bases to secure enough content for estimation of positions. Prior to analysis, words in texts will be turned to lemmas using morpodita python library. Finally, the paper will discuss differences between results obtained by wordfish and results of different analyses (expert surveys, content analysis of manifesto), if they will be avialable before conference since these analysis are conducted during elections by other institutions. As the result, paper helps us to understand the traces of extremist rhetoric and find out in what context the radicalism is increasing.

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