

We are pleased to announce that Dr. **Michael Ramscar** from Eberhard Karls Universität Tübingen has accepted the invitation of the Institute of the Czech National Corpus and is coming to Prague to give **two lectures at the Faculty of Arts**. Both lectures are open to the public.



### **The discriminative nature of human communication**

**Monday, November 27<sup>th</sup> 2017, 6 pm**

*Faculty of Arts, Charles University (room 200),  
nám. Jana Palacha 2*

Traditional studies of language assume an atomistic model in which linguistic signals comprise discrete, minimal form elements associated with discrete, minimal elements of meaning. Since production has been seen to involve the composition of messages from an inventory of form elements, and comprehension the subsequent decomposition of these messages, researchers have focused on attempting to identify and classify these elements, and the lossless processes of composition and decomposition they support, a program that has raised more questions than answers, especially when it comes to the nature of form-meaning associations.

By contrast, behavioral and neuroscience research based on human and animal models has revealed that “associative learning” is a lossy, discriminative process. Learners acquire predictive understandings of their environments through competitive mechanisms that tune systems of internal representations to eliminate or reduce any uncertainty they promote.

In this talk, I will describe some empirical results that indicate that human communication is subject to the constraints that the basic principles of learning impose, and describe how, from this perspective, languages should be seen as discriminative communication systems that exhibit continuous variation within a multidimensional space of form-meaning contrasts. In illustrating how this process works, I will show how a discriminative approach to communication makes sense of many aspects of language that have long seemed puzzling, such as noun class systems (aka grammatical gender) and the semantics of personal names. I will show how noun class and personal name systems are neither random nor arbitrary, and that they actually represent highly structured and highly evolved linguistic subsystems that optimize the discriminative processes of communication.

### **The information structure of discriminative human communication systems**

**Tuesday, November 28<sup>th</sup> 2017, 1 pm**

*Institute of the Czech National Corpus (room 5),  
Panská 7*

Information theory has shown that the distribution of forms is critical to the design of efficient communication systems. In particular, it has been shown that geometric (and exponential) distributions are especially useful in the design of efficient communication systems, both because they are optimal for coding purposes and because they are memoryless.

In the first part of this talk, I will describe some recent finding showing that Sinosphere family names are exponentially distributed, and reveal that historically the name distributions of English that correspond appropriately to them were also exponential, such that the distributional structure of names was, at one point at least, universal across the world’s major languages. I will then describe how these name distributions appear to have optimized meaningful communication about individuals, and show that despite the fact that the aggregated name distributions of modern English speaking countries are Zipf-distributed, the empirical name distributions that speakers actually encounter in these communities also have an exponential form. I will further show how the growth in information in the distribution of names in these communities closely reflects the communicative constraints upon them, suggesting that name systems are far from random or arbitrary, but rather appear to form self-organizing communication systems.

In the second half of the talk I will describe a set of analyses that reveal how the empirical distributions of the other classes of lexical forms that speakers engage with in moment to moment communication in English are also exponential – a result that suggests that the Zipfian distributions long thought to play a functional role in language are actually an artifact of mixing empirical distributions – as well as describing how these structures serve facilitate the discriminative processes of human communication.

