COGNITIVE SCIENCE SYMPOSIUM, UNIVERSITY OF BERGEN

This symposium is an initiative to present and discuss research at the University of Bergen within or closely related to the field of Cognitive Science. The symposium has its origin among the participating departments in the Cognitive Science Bachelor Program found at the University. This symposium is organized by the Department of Information Science and Media Studies, and has participation from informatics, cognitive psychology, philosophy, computer linguistics, as well as information science. The program covers topics ranging from the purely theoretical, like philosophy of though, to the highly applied, like management of uncertainty in expert systems.

Time:
June 15, 10:00-17:00

Location:
Lille auditorium, Lauritz Meltzers hus, Fosswinckels gt 6. Bergen

Registration:
Email to bjornar dot tessem at uib dot no before Thursday June 11th.

Program:

1000 Weiqin Chen:
     Process and product analysis for just-in-time collaboration
1045 Christer Johansson
     Anaphora and abduction
1130 Kåre Johnsen
     Cognitive science and the concept of thought

1215 Lunch (sponsored by Department of Information Science and Media Studies)

1315 Ron van Kesteren, Ton Dijkstra and Koenraad De Smedt
     Markedness effects in Norwegian-English bilinguals
1400 Rolf Reber
     Processing fluency: A feeling at the interface of cognition and affect
1445 Bjørnar Tessem
     Modeling fisheries experts' risk assessments with Bayesian networks
1530 Csaba Veres
     Uncovering semantic patterns in folksonomy
1615 Michal Walicki
     Paradoxes of self-reference

1800 Dinner (not sponsored)

Abstracts:

Weiqin Chen:
Process and product analysis for just-in-time collaboration

Developing models using system dynamics has been shown to lead to deeper processing and understanding of scientific concepts (van Borkulo, 2009). However, learners also face difficulties while engaging in model constructing activities. A peer-to-peer collaboration can facilitate the learner to master the modelling task progressively. I will present an approach which can initiate educational dating based on educational data mining techniques. This approach takes into account learners observed actions and models created.

Rolf Reber:
Processing fluency: A feeling at the interface of cognition and affect

Abstract: Processing fluency is the subjective ease with which information flows through the cognitive system. Research has shown that this cognitive feeling influences subjective familiarity, perceived beauty, and judged truth. From these empirical facts, we developed a processing fluency theory of aesthetic pleasure (Reber, Schwarz, & Winkielman, 2004). I shall present this theory together with new empirical data that builds on this data, among other things about fluency, beauty, and creativity in marketing contexts, and about the role of beauty as an indication of truth in mathematical intuition. Finally, I connect this theory with recent research I did with Weiqin Chen on choice and interest in educational contexts and discuss how a processing fluency theory helps explain the positive emotion of interest.

Michal Walicki:
Paradoxes of self-reference

Among the multitude of theories for handling paradoxes of the liar type, there is none which gives definite and intuitively adequate results in every case. ("Result" means the classification of a given discourse as paradoxical or not.) Each approach is either (i) loose, leaving various parameters unspecified, so that one has to adjust their value to each single case in order to obtain "the right" answer, or else (ii) gives incomplete or even directly counterintuitive classification of various cases. We present a very simple model, based on systems of boolean equations, which does not suffer any of these drawbacks.

Csaba Veres:
Uncovering Semantic Patterns in Folksonomy

The recent popularity of Web2.0 sites has resulted in the need to track vast amounts of content that is constantly changing and evolving. One useful innovation to this end is "collaborative tagging" in which users contribute naive, unconstrained keyword tags to their content. The emergent naive classification has become known as "folksonomy". However, the limitations of tagging systems have started to emerge as their size and popularity has increased. The un structured free form that encourages their initial usefulness, limits their scalability. My work has involved an attempt to uncover latent structure within the folksonomy, from a linguistic/cognitive perspective. I will talk about some of these issues.

Bjørnar Tessem:
Modeling Fisheries Experts' risk assessments with Bayesian networks

As part of the ELORV project (Electronic Operational Risk Valuation) at the Directorate of Fisheries we model the associations between variables and their relative influence on assessing risks for illegal or irregular fishing activities. For this we use a probabilistic approach to construct Bayesian networks that mimic the experts' risk valuations. The goal is to be able to process more information from the vast data sources in the fisheries as well as giving more notority to the risk assessments.

Kåre Johnsen:
Cognitive science and the concept of thought

Comparing two contemporary philosophers, Donald Davidson, and John McDowell, the talk will discuss the prospect of a reductive, cognitivist, understanding of the concept of thought, which sees thinking as nothing but information processing or neural processes. The discussion will focus on the epistemological import of the notion of thinking; and I'm going to suggest that a proper consideration of this import may lead us in the direction of a kind of self-reference argument against cognitivist reduction

Christer Johansson:
Anaphora and Abduction

How can we find out more about human processing of reference? We will look at some versions of "The monkey ate the banana because it was ...". If we ask people to fill in the last word, will that word reflect the monkey (subject), the banana (object) or the situation? Can we change this by changing the context. We will briefly discuss methods based on lexical preference, reaction time, and brain measures such as event related potentials.

Ron van Kesteren, Ton Dijkstra and Koenraad De Smedt:
Markedness effects in Norwegian-English bilinguals

We investigate how bilinguals use language cues in words to speed up their word recognition process. Norwegian-English bilinguals performed either a Norwegian-English language decision task, a Norwegian lexical decision task with Norwegian words and Norwegian-derived nonwords, or a Norwegian lexical decision task with Norwegian words, Norwegian-derived nonwords, and English words (requiring a 'no'-response). Norwegian script contains a number of special letters which do not occur in English. Words can also have a language-specific orthography due to particular n-grams, e.g., 'sj' is common in Norwegian, but rare in English. Bilinguals were found to use the various types of markedness to facilitate their decisions, special letters leading to larger effects than language-specific bigrams. A cross-experimental comparison indicates that the strategic use of language cues proceeds in a bottom-up rather than a top-down fashion. Participants used language membership information, activated by language cues, to speed up responding.