Institute of Cognitive Science: Carleton University

Colloquia Schedule: Fall 2014 – Winter 2015

Date: April 2/15: 11:45 am – 1:00 pm: Dunton Tower 2203

Speaker: Raj Singh (Carleton), joint work with Danny Fox (MIT)

Title: When the Going Gets Tough…The Relationship between Visual Aesthetic Appeal and Performance Efficiency.

Abstract: : It is well-known that disjunctive sentences "A or B" are ambiguous between an inclusive and exclusive disjunction. Recent work has discovered populations in which "A or B" is ambiguous between an inclusive disjunction and a conjunction. These populations include speakers of Warlpiri, American Sign Language (ASL), and English-speaking children. Furthermore, in such populations, the conjunctive reading is overwhelmingly preferred over the disjunctive reading.

This talk will review some of these findings, some of which come from our lab (Olivia Podlesny's MCogSc work on ASL, and our studies of English-speaking preschool children with Andrea Astle, Depth Kamawar, and Ken Wexler). We will also hint at possible connections to the finding that conjunctive concepts are easier to learn than disjunctive concepts. We discuss several pressures that might lead to the attested preference for conjunction, including preferences for minimization of Boolean complexity, preferences for more rather than less information, and preferences to resolve questions under consideration.

Note: A light lunch will be served at 11:30 am

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Date: Mar. 19/15: 11:45 am – 1:00 pm: Dunton Tower 2203

Speakers: Claire Lesage, Nalini Ramlakhan, Dr. Ida Toivonen, and Chris Wildman (all members of ICS).

Title: Reliability of testimony and perception: connecting epistemology and linguistic evidentiality

Abstract: Epistemologists have argued that there are three basic sources of belief: perception, testimony and inference. At the same time, linguists have discovered that many languages have morphemes which encode precisely these sources of evidence (evidentiality). For example, the English morpheme "must" is arguably such a morpheme: a speaker who utters "it must be raining" indicates that their belief that it's raining has been inferred from indirect evidence.

In this paper, we connect generalizations from the fields of epistemology and evidentiality. We also introduce a new method for investigating how reliable different types of evidence are judged to be. A study based on this method indicates that speakers of English rank different sources of evidence according to the same criteria that govern the use of grammaticalized evidential marking.

Note: A light lunch will be served at 11:30 am

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Date: Mar. 12/15: 11:45 am – 1:00 pm: Dunton Tower 2203

Speaker: Dr. Irene Reppa, Swansea University, http://www.swansea.ac.uk/staff/human-and-health-sciences/psychology/i.reppa/

Title: When the Going Gets Tough…The Relationship between Visual Aesthetic Appeal and Performance Efficiency.

Abstract: We present work on the relationship between aesthetic appeal and performance efficiency. Given the subjective nature of aesthetic appeal, and the many underlying contributing factors, examining its possible effect on performance is notoriously difficult to study. Experimental work is now revealing that the relationship between aesthetic appeal and human performance is bidirectional with each affecting the other. Understanding the relationship between aesthetic appeal and performance efficiency has theoretical implications and important real world consequences (e.g., mobile phone, or website uses) for keeping technology users satisfied and functioning optimally.

Note: A light lunch will be served at 11:30 am

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Date: March 5/15: 11:45 am – 1:00 pm: Dunton Tower 2203

Speaker: Dr. Lisa Walker from the Ottawa Hospital

Title: Neuropsychology of MS: Studying Cognitive Dysfunction and its Impact

Abstract: Multiple sclerosis is the most common neurological disease in young adults. Cognitive dysfunction is common in individuals with multiple sclerosis and has a negative impact on quality of life. The profile of cognitive deficits and their course over time is quite variable and dependent upon many factors which will be discussed. Cognitive impairment is linked to both structural and functional brain changes and can be a marker of disease progression. More research is needed to assist people with MS in coping with, and potentially ameliorating, the cognitive sequelae of this disease.

Note: A light lunch will be served at 11:30 am

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NOTE TIME CHANGE

Date: Feb, 12/15: **2:00 pm** – 3:30 pm: Dunton Tower 2203

Speaker: Dr. Julie Boland (University of Michigan, Dept. of Psychology and Dept. of Linguistics): (http://www-personal.umich.edu/~jeboland/)

Title: Sentence Comprehension & Social Context: Meaning & Grammar

Abstract: Psycholinguists are increasingly interested in how social context contributes to both meaning and grammatical processing during sentence comprehension. I will discuss three sets of experiments investigating contributions of social knowledge from several different angles.

First, in series of visual world eye-tracking experiments on lexical access, we found that social properties of a speaker's voice (male/female, adult/child) affected the accessibility of socially biased homophone meanings in narrative contexts. For example, the fingernails meaning of "nails" is associated with women and the hammer meaning of "nails" is associated with men--and listeners recognized the fingernails meaning more quickly when they heard "nails" in a woman's voice.

In another line of research, we've used ERP's to investigate how the social identity (e.g., African American or White) of the speaker's voice influences perception of copula deletion as grammatical or ungrammatical, as indexed by the P600 component. Indeed, we find that the P600 is modulated by the social identity of the speaker. A third line of research investigates how adults acquire grammatical knowledge of non-standard regional constructions (e.g., *The dishes need washed, You might could order a pizza.*).

In all three lines of research, we have found evidence that listeners and readers are attune to some social cues, but we also find that the granularity of the social knowledge that influences language processing in these paradigms is quite coarse.

Note: A light lunch will be served at 12:45 pm

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Date: Jan. 30/15: 3:00 pm: Dunton Tower 2203

Speaker: Dr. Robert Stainton (University of Western Ontario, Philosophy)

Title: Asserting versus Merely Communicating

Abstract:

My question pertains to the contrast mentioned in the title, namely what distinguishes full-on assertion of a proposition from merely communicating it? For instance, what distinguishes asserting that you have not smoked crack cocaine from merely conveying that thought? Put slightly differently, consider two broad classes of speakings:

1. **A**. Asserting, affirming, claiming, stating, declaring, avowing, professing;
2. **B**. Giving to understand, implying, suggesting, conveying, intimating, insinuating, hinting.

I am asking about what the difference is between those in the A-Class and those in the B-Class.

The game plan is straightforward. I begin with several familiar accounts of assertion, in extremely simplified form. Borrowing ideas from Dummett among others, I then sketch an alternative position, in part by comparing assertion to promising. I round out the paper with replies to objections.

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Date: Jan. 29/15: 11:45 am – 1:00 pm: Dunton Tower 2203

Speaker: Dr. Leo Bertossi (Carleton, School of Computer Science)

Title: Logical and Probabilistic Knowledge Representation and Reasoning

Abstract: For several decades the logical and probabilistic schools of KR went on separate paths. We will show how recent developments combine the two approaches into richer representations that can be used both for reasoning and machine learning

Note: A light lunch will be served at 11:30 am

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Date: Jan. 15/15: 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker: Dr. Kristine Onishi (McGill University, Department of Psychology)

Title: Detecting communicative intent in infancy

Abstract: When we see people talking, even if we don't understand the language, we assume they are communicating to each other. What do infants understand about communicative interactions between others? I'll present data suggesting that infants realize that information can be communicated from one person to another and explore infants' expectations about what types of signals are effective and what types of information can be conveyed.

Note: A light lunch will be served at 11:30 am

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Fall 2014

Date: Dec. 9/14: 3:00pm

Location: NOTE ROOM CHANGE: DT 2203

Speaker: Dr. Myrto Mylopoulos (Philosophy & Cognitive Science, Carleton, and Institut Jean Nicod, Paris)

Title: Is there Phenomenology of Agency?

Abstract: It is often held that, just as there is something it is like to smell a rose, taste chocolate, and hear a siren, there is something it is like to perform an action. In other words, a view to which many people are drawn is that there exists a *phenomenology of agency*. But while this is a common starting point for further theorizing, rarely is it critically examined on its own. In this paper, I aim to remedy this situation.

First, I clarify what theorists seem to have in mind when they claim that there is a distinctive, proprietary phenomenology of agency. Next, I canvass particular strategies for establishing that there is such a thing. To begin, I explain why introspection alone will not suffice for this task. Following this, I introduce and employ the so-called method of phenomenal contrast (cf. Siegel 2012), presenting contrasting pairs of cases, for which, in the one case, agentive phenomenology may seem to be present, and in the other, absent. I offer two types of skeptical response to such cases, which serve to block the inference to the best explanation that is required in order to establish the existence of agentive phenomenology on their basis.

I then consider two further strategies for dealing with these skeptical responses. I label these the *robust conceivability strategy* (Horgan 2012) and the *epistemic access strategy* (cf. Goldman 1993; Pitt 2004). I argue that each of these fails to offer a satisfactory response to the skeptics, and therefore to give us good reason to believe that there is a phenomenology of agency.

I conclude that skepticism about the existence of such phenomenology is alive and well. In the final section of the talk, I explain why, even given this result, all hope is not lost. I offer an account of conscious action that falls short of establishing that it is accompanied by any distinct, proprietary phenomenology, but arguably retains all the robust features of our awareness of ourselves as acting that theorists interested in this phenomenon set out to explain in the first place.

Date: Nov. 27/14: 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker: Dr. Ash Asudeh, Carleton ICS

Title. The Perspective Perspective on Reference and Substitution

Abstract: An important problem in the philosophy of language and the linguistic study of meaning (semantics and pragmatics) concerns co-referential terms and substitutability in different contexts. This problem is now commonly associated with Frege (1892), and is often called 'Frege's puzzle'. The puzzle can be presented in various ways, but its essence can be captured as follows: given two co-referential linguistic expressions, why is it that in certain linguistic contexts substitution of one expression for the other is truth-preserving, while in others it is not?

For example, given that (1) is true, since "Hesperus" and "Phosphorus" are different names for the planet Venus, how can it be that (2) can be true while (3) is false?

(1) Hesperus is Phosphorus.

(2) Kim believes that Hesperus is a planet.

(3) Kim believes that Phosphorus is a planet. Alternatively, we could characterize the puzzle by observing that a sentence like the following can be true without entailing that Kim does not believe a tautology:

(4) Kim doesn't believe that Hesperus is Phosphorus.

Frege's own solution was that in addition to a reference, nominals have a sense, or 'mode of presentation', and that in certain contexts, such as those involving propositional attitudes, it is these distinct senses that block substitutability. Frege's puzzle is thus clearly related to the problem of 'referential opacity' in the study of propositional attitudes (Quine 1953, 1956, 1960).

We do not take a strong philosophical stance on modes of presentation or substitutability/opacity. Instead, we take it for granted that there is an empirical phenomenon to be explained here — differing truth value judgements despite substitution of co-referential terms — and offer a formal mechanism for capturing and explaining it. We follow Saul (1997) in observing that problems of substitutability also arise in 'simple sentences'. Our analysis captures these cases, too. Moreover, we also focus on cases of differential interpretation of the same expression (Kripke 1979, Fiengo and May 1998). Lastly, we briefly indicate how our analysis could give insight into cases other than referential expressions, as discussed by Kripke (1979). Thus, the mechanism we propose is not only formally well-founded on advances in formal logic and theoretical computer science, it also gives us the beginnings of a general semantics of what we might informally call perspective.

Note: A light lunch will be served at 11:30 am

Date: Nov. 13/14: 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker: Dr. Kasia Muldner, Carleton ICS

Title: Learning from Collaboratively Observing Tutorial Dialogue

Abstract: Student learning can take place in a variety of instructional contexts, including studying alone, one-on-one tutoring, and collaborative group activities with the aid of course textbooks, to name a few. A less conventional but promising instructional context corresponds to *learning from observing others learn* (i.e., by watching tutorial dialogue between a tutor and tutee). In this talk, I will describe two experiments comparing student learning from collaborative observation of tutorial dialogue against (1) the gold standard of one-on-one human tutoring and (2) collaborative observation of monologue.

Note: A light lunch will be served at 11:30 am

Date: Nov. 6/14: 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker: Wahida Chowdhury (joint work with Christopher Burt, Ahmad Aakkaoui, & Jim Davies)

Abstract. Quanty is an online game designed to derive quantitative estimates based on the wisdom of the crowd. It anonymously pairs players to estimate distances, weights, sizes, frequencies and such from photographs. The degree to which players agree determines the number of points they receive.

We hypothesized this game would generate more accurate aggregated estimates than singular estimates of a variety of familiar objects and scenes by exploiting the wisdom of the crowd effect. Data from 96 participants (46 Americans) showed that their aggregated estimates of a variety of objects approached accurate answers, especially when the aggregates were calculated using median absolute deviations.

Also, the majority of participants thought that the game was as fun as the popular game Tetris. The results suggest that Quanty can be used to improve the judgment accuracy of professionals.

Note: A light lunch will be served at 11:30 am

Date: **Oct. 2/14:** 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker: Dr. Jim Davies, Carleton ICS

Title: Why People Can Find Abstruse Writing Compelling

Abstract: In certain branches of the humanities, writing is difficult to understand, unclear, and deliberately written to be open to multiple interpretations, where in science writing, though sometimes filled with jargon, is written with the intent that there will be only one interpretation. What is the draw of difficult writing? In this talk, I will speculate on reasons from cognitive science.

The talk is based on work from by book *Riveted* and from this article in *Skeptic*:

http://www.skeptic.com/eskeptic/14-01-29/#feature

Davies, J. (2012).Academic obfuscations: The psychological attraction of postmodern nonsense. *Skeptic* 17:4, 44-47.

Note: A light lunch will be served at 11:30 am

Date: Sept 25/14: 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker: Dr. Robert West, Carleton ICS

Title: On the Metaphysical and/or Existential Reality of Systems Levels in the Brain

Abstract: This talk examines the question of what the "cognitive system" is and how it relates to the brain and to conscious experience.

Note: A light lunch will be served at 11:30 am

Date: Sept 11/14: 11:45 am - 1:00 pm: Dunton Tower 2203

Speaker(s) : Dr. Raj Singh (CU ICS) & Dr. Ida Toivonen (CU ICS and SLaLs)

Title: The meaning of "each": Distance Distributivity and Skolemization