



Third International Conference on Interactivity, Language and Cognition

Kingston University, Knights Park
Wednesday 29 June – Friday 1 July 2016

The Genesis of Graphic Skill – Phylogenetic and Ontogenetic Perspectives

London Knowledge Lab
Saturday 2 July 2016

Conference Programme, Abstracts and Workshops

Wednesday 29 June 2016

08:30 – 08:45	Reception	Registration and coffee
09:00 – 11:00	TK401	Workshop A: Distributed intelligence analysis Organiser: Chris Baber
	TK402	Workshop B: Linguaging and translanguaging Organiser: Dongping Zheng
11:00 – 11:15	Reception	Coffee
11:15 – 11:35	TK402	Tactility and embodiment in collective ideation Johanne Bjordahl
11:35 – 11:55	TK402	Linguaging as participatory presencing Jasper van den Herik
12:00 – 12:45	TK101	KEYNOTE: Joanna Rączaszek-Leonardi Externality of language as a precondition for decoupling and integration
12:45 – 14:00	Reception	LUNCH and Poster Session
14:00 – 14:20	TK402	Framing volte-face: The description-experience gap in risky choice framing Gaëlle Vallée-Tourangeau
14:20 – 14:40	TK402	The extended energetics of interactivity Sune Vork Steffensen and Christian Mosbæk Johannessen
14:40 – 15:00	TK402	The information structure of thetic sentences: Ecological semantics Simon Borchmann
15:00 – 15:20	TK402	Affect and affordances: Action and emotion in a learning situation for children with special needs Thomas Wiben Jensen and Sarah Bro Pederson
15:20 – 15:35	Reception	Coffee
15:35 – 15:55	TK402	Agency beyond the agent: Inter-bodily complexity in professional learning Sarah Bro Pederson
15:55 – 16:15	TK402	Taking time, the tactility of talk and a taste for thinking Stephen Cowley
16:20 – 17:05	TK101	KEYNOTE: Chris Baber TBA
17:15 – 18:00	TK402	ISSILC General Assembly

Thursday 30 June 2016

08:30 – 08:45	Reception	Coffee
09:00 – 11:00	TK402	Workshop C: Temporality in Interaction: The Relative Timing of Speech, Gesture and Action Organisers: Joanna Rączaszek-Leonardi and Johanne Bjordahl
	TK401	Workshop D: From computers to cultures: A Cross-disciplinary study of the concept of interactivity Organiser: Gaëlle Vallée-Tourangeau
11:00 – 11:15	Reception	Coffee

11:15 – 11:35	TK402	Does the Web diminish or enhance memory? Richard Heersmink
11:35 – 11:55	TK402	Wayfinding between space and place: How mobile apps, people and environments move together Dongping Zheng
12:00 – 12:45	TK101	KEYNOTE: David Kirsh The value of randomness and interactive visualization in creativity
12:45 – 14:00	Reception	LUNCH
14:00 – 14:20	TK402	Functions and pragmatic aspects of English nonsense Natalia Ursul
14:20 – 14:40	TK402	Bringing the world into the lab Lisa Guthrie
14:40 – 15:00	TK402	Influencing categorical choices through physical object interaction Nick Shipp
15:00 – 15:20	TK402	The ecological niche of supervising in higher education Line Brink Worsøe
15:20 – 15:35	Reception	Coffee
15:35 – 15:55	TK402	'Hearing voices' - Text-mediated dialogical psychology in an interworld Marie-Theres Fester
15:55 – 16:15	TK402	Language and cognition in intergenerational interactions Mahera Ruby
16:15 – 16:35	TK402	Materiality and meaning: The case of the voice Theo van Leeuwen
16:45 – 17:30	TK101	KEYNOTE: Hannele Dufva Making sense of an unknown language: Interactivity in a linguistic problem-solving task
19:00 – 21:00	Strada	Conference Dinner 1 The Griffin Centre, Market Place Kingston KT1 1JT

Friday 1 July 2016

08:30 – 08:45	Reception	Coffee
09:00 – 11:00	TK402	Workshop E: Reducing the mystery behind Gibsonian information Organisers: Andrew Wilson and Sabrina Golonka
	TK401	Workshop F: Distributed thinking in organizations Organisers: Davide Secchi and Emanuele Bardone
11:00 – 11:15	Reception	Coffee
11:15 – 11:35	TK402	A model of personalized education in the enactivist perspective Grzegorz Grzegorzczuk
11:35 – 11:55	TK402	The embodied transmission of cultural skills in the laboratory Lucas Bietti and Adrian Bangerter
11:55 – 12:15	TK402	Dynamical phase transitions during collaborative problem solving interactions Travis Wiltshire
12:15 – 14:00	Reception	LUNCH (ISSILC Governing Board Meeting TK401)
14:00 – 14:20	TK402	Embodied interactions in shared space Pat Healey
14:20 – 14:40	TK402	The interplay of emotions and cognition in forming distributed outcome assessments and goals Norman Steinhart
14:40 – 15:00	TK402	Non-representational explanations for linguistic facts Matthew Harvey
15:00 – 15:20	TK402	Literature as ecological experimentation Paul Thibault
15:20 – 15:35	Reception	Coffee

15:35 – 15:55	TK402	Do do do, the the the: Interactivity and articulatory suppression in mental arithmetic Frédéric Vallée-Tourangeau
15:55 – 16:15	TK402	Playing cards: Multimodal communication and use of visual artifacts Åsa Harvard Maare
16:15 – 16:35	TK402	Tasting watermelons, lifting lemons, and testing toxins: Affordances, values, and time perception Bert Hodges
16:45 – 17:30	TK402	Closing remarks and CILC4

Saturday 2 July 2016

10:00 – 16:00	Workshop G: The Genesis of Graphic Skill – Phylogenetic and Ontogenetic Perspectives Organisers: Christian Mosbæk Johannessen and Theo van Leeuwen London Knowledge Lab , 23-29 Emerald Street, London WC1N 3QS
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Posters (Lunch, Wednesday 29 June)

Code-switching in English Departments in Kurdistan universities

Fatima Berot

Writer-reader communication: Interactional Metadiscourse in MA theses in English L1 & L2

Hosam Darwish

Polysemy as a Reason for Ancestors' Language Loss: Language Preservation Issues of Armenian Speakers of English

Gohar Ghalachyan

Touchy Thinking: Interactivity Improves Planning

Emma Henderson

Does Interactivity Help or Inhibit Transfer? The Role of Transfer and Material Interaction in Insight Problem Solving

Niyat Henok

Place-based Learning Using Mobile Technology

Dan Holden and Yang Liu

Analysis of Interactive Meaning of Multimodal Metaphor in Logos Containing Chinese Characters

Song Jiannan

Investigating the Enactment Effect for Actions Versus Objects: A Developmental Study

Angie Makri

Toward Semiotics of Nastaliq Calligraphy

Mahdiyeh Meidani

Impaired Sensory-motor Integration in Schizophrenia Patients

Joanna Szczotka



Abstracts

Code-switching in English Departments in Kurdistan Universities

Fatima Berot
University of Leicester

This paper examines the use of code-switching (CS) in Facebook comments by lecturers and students at English departments from universities in Kurdistan. Based on data collected via Facebook groups from 12 lecturers, 24 fourth-year and 24 first-year students in early 2014, this paper examines 99 comments which are comprised of 33 comments per group, balanced for gender. Drawing on the methodology of Myers-Scotton (2006), I distinguished Kurdish Matrix Language and English Matrix Language at the level of the clause in the data. After determining the percentage of clauses with code-switching overall, I determined the direction of code-switching within the mixed-constituents. Furthermore, to examine the function of CS, I focused on the differences in using CS by looking at features such as humour and teasing. The results show that there are considerable differences in participants' behaviours both in the choice of matrix language and functions of CS. It is apparent that first, the more advanced English speakers, particularly lecturers, use English as their ML more, which I will demonstrate is related to competence. Second, there is a difference in using humour as a function of CS by the fourth-year student group, which I argue is a result of the style of the group. Thus, the analysis shows that CS is apparent in Facebook written discourse and the reasons for CS are similar to those of the conversation.

The Embodied Transmission of Cultural Skills in the Laboratory

Lucas M. Bietti and Adrian Bangerter
University of Neuchatel

This study provides new empirical evidence regarding how memories and skills based on personal experiences evolve and are learnt throughout series of transmissions over time. Despite the fact that experimental research on conversational remembering has revealed much about the malleability of human memory in conversations, little attention has been paid to the ways in which communication and repeated reproduction may affect the embodied features of individual memories and skills over time. In order to tackle some of these issues that create the conditions for the spreading of memories and skills across different individuals and social groups during face-to-face social interactions, we conducted an experimental study. The experiment consisted of a study of the serial reproduction of memories and performances collected in a joint complex task under different conditions and across transmission chains. Transmission chains were interactive and video-recorded in order to see and understand better the embodied features of informational transfer. Our preliminary findings suggest that even though the embodied communication of

memories and skills gradually affected the amount of information communicated over transmission chains (when compared to the information received in the original learning phase), there was an improvement in participants' performances in the joint complex task over generations.

Tactility and Embodiment in Collective Ideation: The Role of Gesture as an Interactive Semiotic Resource

Johanne Bjordahl
University of Southern Denmark

In recent years, the role of tactility, enactment, and embodiment has been the focus of a range of highly interesting new studies and theoretical insights on individual ecological cognition. For example, it has been shown how feedback from manipulation and exploration of the environment aid and influence individual problem solving. However, in studies of joint problem solving these aspects of ecological cognitive processes have not received a lot of attention. More specifically, in studies of collaborative creativity, these aspects of human cognitive ecosystems have been largely neglected and presumed to play a peripheral role. In the present study, we explore the roles and functions of gesture and embodied enactment in collective ideation in a qualitative study of natural data from a 7 hour creative meeting in a digital marketing company. Drawing on micro-analysis, we show how participants at highly salient points in the meeting use speech, gesture and bodies to enact, reiterate and transform a joint proposition, and thereby succeed in co-creating a new creative addition to the joint task. The study emphasizes some functions and roles of embodied semiotic resources in collective ideation and proposes a more central status of these issues in studies of collective ideation.

The Information Structure of Thetic Sentences: Ecological Semantics

Simon Borchmann
Roskilde University

In prior tradition there are two ways of describing thetic sentences (Haberland 2006). Either they are described as a particular type of judgment (Sasse 1987, Kuroda 2005, Hansen & Heltoft 2011) or in terms of information structure as all-new sentences (e.g. Kuno 1972, Lambrecht 1994). It is agreed, however, that thetic sentences are topicless and have a broad focus. If one examines thetic sentences in language use that forms a part of an activity, discrepancies appear. Thus, there are strong indications they have a topic and a narrow focus. These discrepancies can be traced back to the separation of cognition and action characterizing the epistemologies underpinning the traditional linguistic accounts. In this paper an account based on the epistemology of ecological psychology (Gibson 1979, Reed 1996) is presented. The basic assumption of the

alternative account is that the information shared by the use of a linguistic utterance is specifying an affordance. Four concepts form the basis of two new semantic distinctions replacing the subject-predicate distinction: mode-value and sharing-nesting. A value is a specification of an affordance. A mode is an ability to distinguish between different values of a variable that are appropriate to attend to in the performance of an activity. Epistemologically, topic is a pickup mode, i.e. attending to a relevant variable, the value of which is not shared. Focus is a value to be shared. The focus value depends on the ecological unit in which the variation attended to is nested. This unit is specified by values of nesting modes. In so far as the perceptual systems are coordinated, nesting values are shared. This framework allows for an informative and accurate analysis of thematic sentences (see examples below), and serves to explain the relation between linguistic utterances - written as well as spoken - cognition and material actions.

Taking Time, the Tactility of Talk and a Taste for Thinking

Stephen J. Cowley
University of Southern Denmark

Classic cognitive science links folk views of language to von Neumann style models of grammars. In so doing, it overlooks bodies, voices, talk and how 'thinking' prompts people to act in a physical world. By contrast, on a systemic view of cognition (Cowley & Vallée-Tourangeau, 2013), one posits a world where people use pattern and artifice as they engage and individuate. A distributed perspective on language thus emphasizes the tactility of talk. More specifically, voice dynamics aid people to draw on immergence (Conte et al., 2014) as they talk and individuate. Using experience, they discover future attractors –languages, institutions, beliefs and procedures etc. – that sustain the time 'ranging' of linguistic action. In fields as diverse as playing computer games, science, philosophy, and sport, time-ranging extends repetition as people slowly master practice-based activity. In illustrating how capacities draw on slow processes, I turn to Kehbel's (2015) work on how people use poetry to connect up time, the tactility of verse and a taste for thinking. Human use of fast and slow can be ascribed a quasi-Aristotelian ontology (Lassiter, 2016) or, alternatively, a principle of cognitive separation (Cowley & Vallée-Tourangeau, 2013). As in radical E views (i.e. embodied, enactive and ecological) mental representations are replaced by attention to bodies that attune to talk and thinking. From a methodological perspective, agent-environment interactions unfold as, at once, cultural regularities prompt persons to use pattern and artifice.

Writer-Reader Communication: Interactional Metadiscourse in MA Theses in English L1 & L2

Hosam Darwish
University of Bedfordshire

EFL students are frequently assessed in terms of the requirements of English academic norms to which they do not belong and of which they may have little experience; one of these requirements is using metadiscourse in their academic writing. Metadiscourse refers to the writer's linguistic manifestation in their text to interact with their readers. The interactional discourse markers, such as hedges (may, probably), boosters (must, definitely) and engagement markers (as you see), deal with the expressions of the opinion of the writers, and their relationship and interaction with their readers. The paper aims to compare interactional metadiscourse markers written by MA postgraduate Egyptian students with (Arabic L1) at Egyptian universities and their English native writer counterparts in British universities. Following Hyland's model (2005), twenty theses (discussion chapter) for each group were searched electronically using a computer tool called Text Inspector (Bax, 2013) and AntConc concordance tool (Anthony, 2011) to identify the use of more than 230 potential expressions of interactional metadiscourse markers. Furthermore, six semi-structured interviews were conducted with six postgraduate Egyptian students to investigate Egyptian writers' perceptions of the functions of interactional metadiscourse and the factors that could affect their understanding and use. The findings indicate that there are statistical significant differences in terms of attitude markers, hedges and self-mentions between the two groups. The British writers employed higher tokens of hedges, self-mentions and attitude markers than their Egyptian counterparts. Also, British writers used noticeably more types of interactional markers in two categories (attitude markers and hedges). The conducted interviews show that Egyptian postgraduate writers have a fuzzy understanding of most of metadiscourse categories (e.g. hedges, boosters). Traditional instruction, individual knowledge of the genre and L1 influence are found to be the main factors that could affect Egyptian students' use of metadiscourse.

Making Sense of an Unknown Language: Interactivity in a Linguistic Problem-Solving Task

Hannele Dufva
University of Jyväskylä

The paper discusses preliminary findings from a linguistic problem-solving task (Steffensen et al. 2016) that was accomplished as pair-work. In the task, the research participants - who had no prior knowledge of the language - were presented a short text in Slovak and asked to translate the text into Finnish. Their task performance was analysed first, by using ScriptLog programme (Strömquist & Karlsson 2002), a keystroke logging software and second, by analyzing the videotaped task activity (transcribed with ELAN). The task was modelled after an informal classroom activity

that aims at raising the students' awareness of the different types of resources they can use as affordances for second/foreign language learning. Tapping into the kind of knowledge that has not been studied in the classrooms, the task forces the participants to proceed on their own. Still, as former observations suggest, the participants can - when pushed - use a variety of problem-solving strategies that are related, e.g., to their 'linguistic' experience and the cues they are able to see in the text. In this paper, I focus on observations on the embodied interactivity between the two research participants and the material tools (e.g. keyboard; text-on-the-paper; text-on-the-screen, other; Kirsh 2010). Further, I briefly discuss the relevance of findings for applied linguistics.

'Hearing Voices' – Text-mediated Dialogical Psychology in an Interworld

Marie-Theres Fester

University of Southern Denmark

'Hearing' a friend's voice when only reading their text messages seems to be absurd. But how absurd is it really to "hear" and/or even "imagine" one's interlocutor? Within my work, I label this phenomenon as *co-imagination* by tracing it back to Bakhtin's (1986) notion of the *Other* and, simultaneously, acknowledge the embodiment of language (Cowley, 2014). In the realm of a longitudinal study between close friendships, texters vividly reported to 'hear' and the 'see' their interlocutor. In terms of dialogical psychology, the texters' engagement is set in an interworld where "meanings, understandings, contents (of thoughts) and ideas" are seen as "interrelational phenomena between individuals and between the subject and the affordances of his or her ecosocial world" (Linell, 2009: 160). Within their sense-saturated interworld, one teases her friend for exaggerating his being sick, who in return fights for some sympathy. Another corrects a misunderstanding by shouting 'Halloooo!!!' at her friend, and all framed by text-based social interaction. As language, texting is about people, and mainly about how individuals experience each other. Through *co-imagining*, people enact their interpersonal lived experiences restricted by the medium's ecology. Arguing for a dialogical psychology, this research not only advocates a social-embodied cognitive approach to language, but also stresses the necessity of investigating human-to-human interaction in new media to explain the absurdity of 'hearing' voices.

Polysemy as a Reason for Ancestors' Language Loss: Language Preservation Issues of Armenian Speakers of English

Gohar Ghalacgyan

Yerevan State University

The weakening of semantic connections between the word as a combination of letters and the concept it denotes can become a base for the loss of a language. The native language of immigrants' bilingual children, who have different representations for similar concept in each language, are more likely to get under the

threat of being lost as a result of polysemy. For example, the English word *table* and Armenian word *u k n w n* [seghan] denote the same object in their primary meaning, i.e. a piece of furniture. But the English word *table* also has the meaning of chart, while Armenian word *u k n w n* [seghan] has the meaning of trapezium. Armenian speakers of English, with the desire not to get confused with the differences of meanings will start to withdraw the use of *u k n w n* [seghan] even at home substituting with *table*. Gradually this word substitution will bring forward to the loss of the language. We carried out experiments with 50 bilingual children of Armenian immigrants living in English speaking countries aged 7-13 to find out the extent of negative effect of English on Armenian. The main techniques used were plays and interviews through skype depending on their age, predilection and character. Proper attention was paid to their lexicon, the languages their parents used at home, circumstances in which they substituted words. In this paper we firstly mention the reasons of polysemy for becoming the cause for the loss of ancestors' language among Armenian speakers of English. Finally, we discuss: 1) Why polysemy bans the frequent use of ancestors' language; 2) Why polysemy effects differently on different immigrant groups; 3) The negative effect of English on Armenian bilingual children.

A Model of Personalized Education in the Enactivist Perspective

Grzegorz Grzegorzczuk

University of Gdańsk

Among a number of teaching practices personalized education is gaining in popularity owing to its enticing appeal of a novelty, humanistic attitude and unparalleled pedagogical results unlike those observed in traditional standardized mass education models. Belonging to the fourth moment in the history of education (according to the timeline in Davis, Sumara and Kapler 2015) personalized education under the names of tutoring or educational coaching is boldly entering Polish schools and the academic world. Observing the daily practices of tutors and educational coaches on various levels of schooling we can note a number of features which contribute to the emergence of a model where learning becomes an autonomous lived experience. In our paper we intend to propose a description of this model in which communication is understood as a collaborative practice characterized by co regulation (Fogel 2009, Butler & Randal 2013), structural coupling (Maturana & Varela 1987) and enkinaesthetic polyphony (Stuart & Thibault 2015). This will lead us to see learning as a result of evolving interaction of the learner with his/her environment through the medium of languaging. Understood as such, learning in dialogical tutor-tutee situation is a distributed, embodied and enacted meaning-making process rather than mere 'sending' and 'receiving' of substantiative information (in line with the notion of participatory sense-making found in DeJaegher &

DiPaolo 2007). We therefore postulate the claim that personalised education owing to the contextual conditions it offers prompts deep-level learning.

Bringing the World into the Lab: The Methodological Challenges of Exploring the Role of Interactivity in Cognition

Lisa G. Guthrie
Kingston University

A systemic perspective encourages the analysis of cognition as emerging from multi-scalar interactions involving mind, body and the world. In doing so it embraces the embeddedness and situatedness of the individual in an artefact-rich environment. The dynamic nature of interactivity and its role in cognition is acknowledged in varying degrees by researchers who promote the importance of adopting a distributed cognition perspective on problem solving. Experimental research by Baber, Kirsh, Steffensen and Vallée-Tourangeau, among others, has illustrated how interaction with artefacts can augment and transform performance in problem solving. However, researching the impact of interactivity on problem solving and the principled exploration of the nature of the interactions with artefacts presents many challenges. In this paper, I discuss a number of those challenges, and review the methodology employed in some recent work on transformation problem solving. I argue that feral cognition can be examined under laboratory conditions, but these must be engineered to allow agents to interact with a physical presentation of the problem. In this way, the laboratory data offer a more representative window onto how people solve problems outside the psychologist's laboratory.

Non-representational Explanations for Linguistic Facts

Matthew Harvey
University of Southern Denmark

There is a growing body of research that attempts to account for some aspects of languaging activity in non-representational terms. In general, this involves an effort to map out the structure of verbally organized bodily activity on multiple timescales. The present paper argues that this emphasis on the verbal carries an inherent risk of accepting analytical units that are incompatible with naturalism. For instance, phonological forms are sometimes accepted wholesale, "realized" either as repeating articulatory gestures (e.g., Fowler 2014; Mulak, Best, Tyler, Kutamura, & Irwen 2013) or abstractions across the activity of whole communities (e.g., Love 2004; Ramscar & Port 2015). Utterances and words are often treated as "instantiated" in the dynamics of bodily coordination (e.g., Christiansen, Fusaroli, & Tylén 2016; Raczaszek-Leonardi 2014), and even an explicit focus on massively multi-scalar dynamics leaves room to talk in terms of "fractal verbal patterns", "submorphemic operators", and "lexicogrammatical patterns" (e.g., Bottineau 2008; Steffensen & Pedersen 2014; Thibault 2011; Uryu, Steffensen, & Kramsch 2013). This paper

suggests some characteristics of an approach to language that is compatible with radical embodied cognitive science (e.g., Chemero 2009; Hutto & Myin 2013; Wilson & Golonka 2013; cf. Harvey 2015). We can assume that representationalist and structuralist linguistic findings can sometimes be treated as accurate descriptions of limited aspects of phenomena we wish to account for. Given this, we are seeking to explain social action (how it comes about, how it is organized on various time-scales, how it relates to lived experience) in terms of biological mechanisms for vocalization. In other words, we might ask: what arises from a functional analysis of vocalization as social action? As an example, the paper examines "transfer" and "interference" of Spanish and English phonological features in bilingual children. These are empirically robust, but are typically given non-naturalistic representational explanations (e.g., Barlow 2014; Fabiano & Goldstein 2005; Fabiano-Smith & Goldstein 2010). By hypothesis, they might instead be explained in terms of constraints – of various kinds – on the organization of vocal tract activity.

Does the Web Diminish or Enhance Memory?

Richard Heersmink
Macquarie University

We increasingly use the Web as an external memory system, in that way transforming our memory strategies. Research suggests that when we know information is accessible in some external media, we tend to put less effort into encoding it internally. Instead, we develop ways to remember where the information is stored rather than its exact content. Some argue that this strategy is adaptive because it frees up internal memory which can then be used for other (perhaps more important) cognitive tasks, whereas others argue that this is maladaptive because it makes us less knowledgeable. In this paper, I first have a closer look at the empirical evidence and suggest that we should not jump to conclusions. I then place it in a broader cognitive-historical framework and argue that in our recent evolution we have always interacted with external information to perform some of our cognitive tasks, augmenting and shaping our cognitive abilities. We are thus essentially a soft self, coevolving with the tools and technologies we use. Our goal should not be to merely point the finger at the technology, but to actively and responsibly shape this co-evolutionary process in a way suitable for cognitive agents in an information society.

Does Interactivity Help or Inhibit Transfer? The Role of Transfer and Material Interaction in Insight Problem Solving

Niyat Henok
Kingston University

The 'Aha!' experience has often been explained through an internal cognitive framework. However, external actions may facilitate insight. The role of transfer and material interaction in insight problem-solving was investigated using the Cheap Necklace

Problem. In Experiment 1, participants completed the same problem twice after a two-week gap, either using a standard paper-and-pencil questionnaire or using physical artefacts. Performance, measured as successful completion of the task, was substantially better with increased interactivity. All participants demonstrated transfer as they significantly improved in performance and were faster to reach a solution after the two-week gap. Experiment 2 measured the role of transfer and material interaction when the problem presentation changes after the two-week gap (low-interactivity to high-interactivity or high-interactivity to low-interactivity). Transfer was evident with improved performance after the two-week gap and improved latencies to solution. However, transfer was facilitated for problem-solvers who were presented with the low-interactivity version first, and experienced the interactive version. These quantitative findings were extended through a detailed qualitative video analysis of problem solving strategies in order to examine the exhaustive interactions between a problem-solver and his/her environment. These findings may be explained when considered through the lens of distributed cognition.

Tasting Watermelons, Lifting Lemons, and Testing Toxins: Affordances, Values, and Time Perception

Bert Hodges

University of Connecticut and Gordon College

As scientists, how should we think about time? To begin, we could see how others evaluate their experience of events. Timing is, of course, one of the most crucial dimensions of action and perception: Interception, avoidance, conversing, mating, foraging, and all other forms of coordination and skill depend on being at the right place at the right time with the appropriate partners. Nevertheless, people's sense of time, which is impressively precise in some ways, varies considerably with the nature of what is being perceived or enacted. In a wide array of tasks, attempts to reproduce the time interval of some event have shown systematic trends toward underestimation or overestimation. I will describe an array of experiments (Lu, Hodges, et al., 2009; Lu, Mo, & Hodges, 2011; Lu, Zhang, & Hodges, under review) that reveal a variety of relativity effects in time perception, which are related to the valence and magnitude of various affordances. Affordances refer neither to objects, nor to persons, nor to some fixed relation between them, but to possibilities for how they can work together to realize values. Negative events are generally longer than positive events (valence effect) and larger magnitudes (e.g., number, size, brightness) are generally longer than smaller ones (magnitude effect). However, when and how these patterns obtain depends on action contexts, and the meanings and values that are being realized; thus, timing is shaped by affordances that are relevant in that context. For example, lifting watermelons leads to longer time estimates than lifting lemons, but tasting watermelons and lemons reverses the timing relation. Similarly, small magnitudes can lead to large timing effects in the right context (e.g., testing for toxins), and

large magnitudes can become inconsequential for time when embedded in larger events that are positive (e.g., carrying loads of lemons to feed hungry people).

Place-Based Learning Using Mobile Technology

Dan Holden and Yang Liu

University of Hawaii

The purpose of this study is to explore the impact of time and space on the emergence of language and cognition. In regard to the term of "time and space", we adopted Yifu Tuan's (1979) framework, which defines "both time and space are orientated and structured by the purposeful being...they are an indissoluble part of experience and movement." By utilizing a combination of theories of place-based learning and mobile-assisted language learning (MALL), the research team at the University of Hawaii at Manoa was able to design their own augmented reality game for a target population of ESL students. The game, *Guardians of the Mo'o*, was developed through several iterations in order to better enhance the students' awareness of the affordances for language learning on the university's campus. With the aid of the GPS tracker within their mobile devices, the storyline of this game was plotted to lead players to various culturally-significant locations where they were required to collaborate to solve various tasks within the target language to progress through the game. We have selected one particularly complicated quest in order to investigate the following question: how did the students orientate themselves in both virtual and physical spaces in order to manage their problem-solving activities? By using Multimodal Analysis (Baldry and Thibault, 2005), we argue that, through skilled linguistic actions (Cowley, 2013) and their coordination (co-action, Zheng, 2012) in the "fields of care" (Tuan, 1979), the students were able to discover and realize their values through way-finding and caretaking (Hodges, 2009). The emergence of languaging was triggered in situ because students were interacting with the artifacts in the physical world in order to progress in the virtual world. We believe *Guardians of the Mo'o* was a successful attempt to uncover the influence that situated learning has on cognitive emergence.

Affect and Affordances: Action and Emotion in a Learning Situation for Children with Special Needs

Thomas Wiben Jensen and Sarah Bro Pederson

University of Southern Denmark

In combining new tendencies within distributed language and cognition, emotion studies and ecological psychology (Thibault 2011, Chemero 2011, Fuchs 2013, Slaby et al 2013, Jensen 2014, Colombetti 2014), this paper explores how the notion of affordances gains strength and explanatory power by being linked to the phenomena of affect and emotion. In doing so we claim that the notions of direct perception and affordances can be used to analyse and understand the fast and on-going trajectory of choices that underlies human interaction as it takes the species-specific dynamics of human emotionality into the equation of cognitive action. This perspective is laid out in an analysis of

real-life data: a learning situation in a school for children with special needs. The example shows how a boy with special needs manages to change the trajectory of a card game by acting an answer instead of delivering a verbal answer as the rules of the game prescribe. Thus, the boy and the speech and language therapist jointly manipulate the interpersonal environment in a way that enables learning through playfulness rather than rule-following. From an ecological perspective we argue that the participants employ the affordances of the environment: the physical setting, the rules of the card game, the interpersonal proximity of the situation, which leads to unexpected and surprising choices. The situation entertains a number of potential affordances; yet only one is enacted. This choice – a pull towards certain aspects of the environment at the expense of others – is saturated by emotionality and affective involvement. In this sense we argue that affect and emotion are intrinsic components in the actual realization of affordances in real-life situations. Finally in a wider theoretical perspective, these findings are used to illustrate how emotion and cognition can be re-thought, not as distinct processes, but as intertwined in an organism-environment-system (Jarvilehto 2000).

Analysis of Interactive Meaning of Multimodal Metaphor in Logos Containing Chinese Characters

Song Jiannan

Shanghai International Studies University

A Chinese character exists as far more than just a single modality of social semiotic. It functions by nature as a pictographic, ideographic, indicative hybrid, which means different semiotic types, i.e. pictorial, painting and linguistic multimodality can be integrated and fused altogether as a meaningful whole. As a result, when people express and communicate information with complication of multi-layers, a Chinese character, with great efficiency, may make complication more concise, information more implicit. Characteristics of this kind will usually be manifested and particularly made use of by art designing. This research, taking the logos of Olympic Games and World Exposition held or to be held in Beijing and Shanghai as examples, elucidates, with a social semiotic perspective, how multimodal metaphor in logos containing Chinese characters is organized, designed and their general patterns and principles. This research finds that designers make use of calligraphic style, character stroke and color as semiotic enhancers and triggers in order to construct mapping relations between Chinese character and meaningful multimodality in source domain by functional ways of enhancement, elaboration and expansion. In addition, based on Kress and Leeuwen's analysis framework of visual grammar, this research pays more attention to make it clear how visual logos containing Chinese characters express such unique interactive discourse meanings as publicizing Chinese culture and history, motivating more participating people and popularizing themes of the Games and Exposition. This research aims to prove that an overall analysis of multimodal metaphor of Chinese characters

logos requires a micro and macro-combined perspective in which functional creation of metaphor and interactive meaning in logos are both considered.

Playing Cards: Multimodal Communication and Use of Visual Artifacts

Åsa Harvard Maare

Lund University

My presentation is about multimodal communication between players of a card game, and how the playing cards as visual artifacts are used for communication, in combination with other modalities such as talk or gesture. The purpose of the study is to support the design of educational games through a better understanding of the relation between visual artifacts and observational learning. I have video-recorded children engaged in playing the game Set1 in a Swedish leisure-time center, and excerpts of the video recordings have been analyzed in order to describe how players communicate and coordinate with each other. Playing Set involves establishing areas with different functions: the *display* with cards to combine into sets, the *construction area* where a player matches cards, and *stacks of found sets* for each player or team of players. These areas, and their placement, reflect the state of the game: who plays with whom, and who is in turn to act. Unlike talk or gesture, visual arrangements of objects remain visible, and thereby available as a resource for further actions of participants (Streeck 2011). Communications about how to play the game are often produced by acting on or attending to the playing cards: protecting cards from intruders, or pushing a card towards another player. From the point of view of design, it is important to follow how visual artifacts in combination with participants' bodies define the visual scene and constrain what parts of the game that are visible to participants (Goodwin 2000). There is no clear boundary between players and observers: those who stand behind the players and watch are learning as well, which make them part of the target group for educational game design.

Investigating the Enactment Effect for Actions Versus objects: A Developmental Study

Angie Makri

University of Bristol

Previous research has shown an overall superiority effect of enactment (that is performing relevant actions to corresponding instructions) over verbal repetition in memory recall for adults (Allen & Waterman, 2014; Yang et al., 2014) and children (Gathercole et al. 2008). The present experiment aims to investigate whether enactment at encoding and/or retrieval improves memory for verbs (actions) and/or nouns (objects) in five and seven year old children. Working memory capacity for declarative information is thought to be increased throughout childhood (Gathercole et al., 2004). This study will examine whether this is also the case for working memory for actions (procedural working memory). The second aim of this project is to explore if memory for actions and objects differs as a

function of encoding and/or retrieval condition. So in other words, whether enactment supports memory in general (both for actions and objects in this instance) or if the effect is localized to action related words. Participants will complete a total of four blocks (of 20 trials each) formed by crossing two types of encoding (Enactment or Verbalisation) and two types of retrieval (Enactment or Verbalisation). In both encoding conditions participants will hear a number of instructions and will be asked to either enact them or repeat them verbally as these instructions are presented. In the recall conditions participants will re-enact or verbally repeat the instructions. Stimuli to be recalled (verb or noun) and number of stimuli presented (3 or 4 sentences) will vary between trials. Participants will also be asked to complete a short term memory task (digit span) in order to examine the relationship between working memory capacity and task performance. The results will be presented and future implications will be discussed.

Toward Semiotics of Nastaliq Calligraphy

Mahdiyeh Meidani
University of Tuebingen

This paper examines Nastaliq calligraphic letterforms from a multimodal social semiotic perspective and characterizes the visual elements of Nastaliq calligraphy and their potentials in meaning-making. In essence, here, I do not view calligraphy as merely a visual art or sub-branch of the fine arts, nor as a timeworn phenomenon in an obscure corner of the arts, but as an autonomous self-determining system that has been shaped in a specific social context with its own specific rules and principles in meaning-making. I consider Nastaliq calligraphy as a multimodal means that functions simultaneously in the areas of art and visual communication, both discursively and analytically. Based on the social semiotic theory of multimodality (Halliday, 1978, 1985; Jewitt, 2009; Van Leeuwen, 2005; Kress and Van Leeuwen, 1996, 2001, 2002; Kress, 2010), I suggest a framework for a syntactic, and then a contextual, analysis of the characteristics of visual Nastaliq fragments. These preliminary analyses lead to a semantic analysis, through which I identify the meaning potential of each element in this type of calligraphy. In essence, I apply the core values of social semiotic theory to describe the regulation system of Nastaliq, theorize that it is a distinct semiotic mode, and finally establish a systematic grammar and an analytical structural framework for Nastaliq as a system. The paper also demonstrates how similarities and differences between Nastaliq—as multi-origin, polyglot, and multi-dialectical visual phenomenon—and other types of visual arts and communication systems offer a multitude of factors regarding the potentials, impacts, and resources of this calligraphy/phenomenon in the construction of meaning and communication. The stable yet dynamic principles of Nastaliq imbue it with the potential for a variety of applications in different communicative situations. It is characterized by flexibility, softness, and at the same time systematic and regular motions, as well as a

stable and dignified composition, which taken together function as an elegant synchronic whole. These concurrent characteristics expand the scope of Nastaliq's potential for use as a systematic means in the visual communication field, rather than simply a one-dimensional and ad hoc means to provide visual beauty and aesthetic enjoyment.

Agency Beyond the Agent: Inter-bodily Complexity in Professional Learning

Sarah Bro Pedersen
University of Southern Denmark

In this paper I investigate the principles in on-going teaching and learning processes between professional dancers and a choreographer. The focus is on how variability in processes, rather than pure repetition, enhances the possibility of learning (Hodges, 2014), which, in this context, involves increased stability of coordination achieved through a perceptual sensitivity and enhanced neuromuscular control. The paper thus hypothesises that statistics and repetition are not primary enabling conditions in flawless skilled task performance. I argue that motor skills are the result of a direct attention toward multiple dynamics over time. By speeding up or slowing down a process, for instance, variability in processes enriches the perceptual system, just as it becomes sense-saturated (Steffensen, 2013). Based on real-life data, I show how practicing a new dance sequence is *not* about pure repetition; rather it is about creatively doing it differently over and over (Kirsh, 2011). I conclude that the best result (here the most precise and timed sensory-motor coordination) is achieved by using a non-repetitive strategy within a *frame of reference* (de Vignemont, 2008). A dance's sequential aspect (step-by-step components) is crucial to set the overall macro-orientation of the task. This means that the sequentiality of the steps in the dance is repeatable, but how the sequence is learned builds on highly varied inter-bodily dynamics such as voice dynamics, pace of movements, the words said to guide the attention etc. Further, teaching and learning involve a double orientation. The choreographer and the dancer(s) use each other as displays to extend the learning system in space: the teacher acts in relation to his direct perception of the dancer and vice versa.

Externality of Language as a Precondition for Decoupling and Integration

Joanna Rączaszek-Leonardi
University of Warsaw

Dialogical actions with others start long before children can talk and even before they understand speech. Very early on, actions become social, acquiring power to constrain partners in interaction. This intentional dynamics include vocal exchanges, which, however, quickly take on an especially powerful role in controlling interaction. This paper will emphasize two aspects of this power: 1) linguistic means of controlling collectivity are relatively energetically "cheap" and function even in those situations, in which the presence of physical, bodily dynamics is minimal; and 2) they have the power

of integrating, or pooling, the idiosyncratic resources available for each partner in an interaction. I will underscore that both those aspects crucially depend on the public, external nature of talk, which allows for differentiated perspectives to clash and for individual experiences to come together.

Language and Cognition in Intergenerational Interactions between Grandmothers and their Grandchildren

Mahera Ruby
Goldsmiths University

Most research in intergenerational studies has been through the lenses of Psychology and Anthropology rather than Education (Ruby 2015), and very little of this research includes the perspectives and voices of grandparents. My PhD study (Ruby 2015) is from a sociocultural perspective using an ethnographic approach involving three families. It furthered the findings from the study by Kenner et al (2004) by including the perspectives of parents and teachers. For the purposes of this presentation, I highlight the importance of intergenerational learning between the children and their grandmothers in their homes. I address the question, 'are teachers aware of the intergenerational learning taking place at home and how it aids the child's learning at school?' In order to answer this question, I explore the dynamics of the relationships between these children and their grandmothers, and how teaching and learning takes place during their interaction whilst tackling a jigsaw puzzle. The grandmothers choose to speak mostly in a dialect of Bengali - Sylheti (a regional language spoken by families from the Bangladeshi region of Sylhet) - during the activity. I also explore why the grandmothers' speaking Bengali takes on special meaning and how this facilitates the language development and cognition in the children. I argue that these children consciously adapt their learning styles when they are interacting with their grandmothers. I emphasise that their ability to do this is aided by the grandmothers' contributions, which enhances the children's language and cognition. I believe the role of grandparents in this field is not adequately acknowledged at present by teachers. This, I argue, enables the child to develop what I refer to as 'learner flexibilities' - a skill that needs recognition within families and schools in order to improve children's language and cognition experiences, and provides an interesting angle to tactility of thinking and talking.

Influencing Categorical Choices Through Physical Object Interaction

Nicholas Shipp
University of Hertfordshire

Recent research has shown that action knowledge influences categorical decisions (Borghini, Flumini, Natraj & Wheaton, 2012; Chao & Martin, 2000; Iachini, Borghini & Senese, 2008; Kalénine, Shapiro, Flumini, Borghini & Buxbaum, 2013). Shipp, Vallée-Tourangeau, and Anthony, (2014) showed that action influences

categorisation in a forced-choice triad task when combined with taxonomic information and presented within a functional context. The present experiment examined whether participants would be more likely to match items in a triad task based on shared actions following priming with the functional actions of the objects. Participants engaged in the triad task used in Shipp et al. after a priming phase where they either interacted with a series of objects for their functional capacity (Action Priming), grouped them into categories (Taxonomic Priming) or moved them from one table to another (Movement Priming). Items within the triads were presented as an image either on a white background (context-lean condition) or as a functional scene with the object being used by an agent (context-rich condition). Consistent with Shipp et al. the results showed that action was primarily used to base choices on the triad task when the action choice also shared a taxonomic relation, and was presented in context. Additionally, participants were more likely to select the action related item when they had been primed with the functional action of the objects. The results are discussed in terms of activation of the ventro-dorsal system (Buxbaum & Kalénine, 2010) facilitating how participants mentally simulate the objects (Barsalou, 1999, 2003; Yeh & Barsalou, 2006) leading to higher action choices on the triad task.

The Extended Energetics of Interactivity

Sune Vork Steffensen and Christian Mosbæk
Johannessen
University of Southern Denmark

In recent years, many branches in cognitive science, philosophy of mind, and the language sciences have converged on the idea that cognition is situated, embedded, embodied, enacted, distributed, ecological, dynamical or other variants of the point of view that *cognition is irreducible to neural-based symbolic processing of representations of sensorial input and agentive output*. While this is an empirical question that can be investigated using well-known experimental and observational methods, a strong undercurrent in the debate has been the pursuit of conceptual models that allow us to interpret empirical data. In this paper we will present such a conceptual model. If indeed human cognition is the totality of situated, embedded, embodied, extended, distributed etc. activity, then the scaling effect of human agency ought to be accounted for in our theories of cognition. We will (i) place human cognition in an overall flow of human interactivity, i.e. "sense-saturated coordination that leads to results" (Steffensen, 2013), (ii) embed that human interactivity in an ecological and systemic view of natural reality, and (iii) widen the ecological perspective to encompass flows of energy. In other words, we propose an understanding of *human interactivity as energetic flows*, thus also accounting for the *heteroscalarity* so characteristic of human organism-environment systems.

The Interplay of Emotions and Cognitions in Forming Distributed Outcome Assessments and Goals During Impaired and Successful Forms of Interactivity

Norman Steinhart

University of Toronto and University of Southern Denmark

The Distributed Theory of Language and Cognition, and Interactivity Studies focus upon the coordination of objects, languaging and activity for successful human functioning. However little research has been done on the roles of emotions and social cognitions/perceptions to achieve these complex results. This presentation will present research that examines the ways that humans incorporate the emotional states, languaging, and bodily activities of other humans into their action perceptions, and social interaction plans, through analysis of some of the interactivity differences between healthy and depressed/anxious patients. Initially, the standard categories of “distorted thinking” of patients used in cognitive behavioural therapy, (CBT) that are traditionally considered as individual disorders, were instead analyzed in terms of their social cognition/perception aspects that interfered with joint social activity. Transcripts from video recordings of CBT sessions and written reports of inner speech ‘thoughts’ of anxious and depressed patients were utilized as source material. FINDINGS: Patients’ anticipations and response to their interactions (following Jarvilehto) were biased by the actual or anticipated emotions of the other actors, showing cognitive exaggerations in assessing objective performance and likelihood and severity of errors, and distorted action perceptions/re-enactments. These disorders of distributed cognition could be attributed to patients’ inability to form a normal distributed outcome perception with others using common distal events, and to their dependence upon an emotionally- and social-allocentrically (Steinhart, CILC II) biased frame of reference to measure their actions and outcomes. Through the use of common external objects and events within new joint activity trials during CBT, patients learned to develop a common ground of interaction goals and evaluation. This learning process was analyzed using emotional cognitive event analysis, (ECEA) a new method developed from cognitive event analysis (CEA) that determined the process and specific therapeutic events that led to more functional interactions between emotions and cognitions during interactions.

Impaired Sensory-Motor Integration in Schizophrenia Patients

Joanna Szczotka

Jagiellonian University

Schizophrenia is heterogenous, psychiatric disease that leads to psychotic episodes, delusions of control, depersonalization, derealization, flat affect and many others (American Psychiatric Association, 2013). Although in scientific literature there is a vast amount of reports indicating anomalous self-experience in this disorder (Parnas, 2003; Scharfetter, 2003; Sass, 2003,

Fuchs, 2005) there are very few empirical studies that ties embodiment view to psychopathology of schizophrenia. It has been demonstrated that schizophrenic patients have more flexible body representation as they significantly easier fall into bodily illusions driven by multisensory conflict (rubber hand illusion - Thakkar, Nichols, McIntosh, Park, 2011). They also have some difficulties with recognition their own face (Kircher, David, 2003) and they use body knowledge in cognitive tasks less efficiently compared to controls (Ferri, Frassinetti, Mastrangelo, Salone, Ferro, Gallese, 2012). Moreover, their perception does not seem to be driven by object-affordances as much as among healthy group (Sevos, Grosselein, Pellet, Massoubre, Brouiller, 2013). The following poster provides a theoretical framework accounting for negative symptoms of schizophrenia in terms of embodied cognition paradigm. In this context, if anomalous sense of ownership and sense of agency arise from impairment in sensory-motor integration, schizophrenia could be considered as a point on the spectrum of disordered states of body representation. Accordingly, mild distortion of sensory-motor integration leads to schizotypal personality disorder, whilst its most dramatic changes result in Cotard’s syndrome – the profound delusion of being dead (Debruyne, Portzky, Van den Eynde, Audenaert, 2009; Siever, Davis, 2014). Neurobiological findings support that view (Tononi, Edelman, 2000). Future studies are suggested.

Literature as Ecological Experimentation: Transactional Weavings of Affects, Experiences, Selves, Stances, and Wordings in Literary Texts

Paul J. Thibault

University of Agder

The distributed view on human languaging and interactivity has so far mainly focused on situated and embodied first-order languaging as a form of sense-saturated whole-body coordination between persons, situations, artefacts, technologies, and so on in the extended human ecology (Cowley, 2012; Kravchenko, 2011; Steffensen, 2013; Thibault, 2011a, 2011b; Valle-Tourangeau, 2011). Less attention has been paid to texts and what people do with texts and, concomitantly, what kinds of interactivity and what kinds of experiences do different kinds of texts afford selves in the extended human ecology. One formal approach in linguistics to textual-linguistic patterning has been to focus on the collocational environments of the different usages of linguistic terms. In this way, analysis would provide information about the co-occurrence relations – the company words keep – of linguistic terms in the different semantic environments. Without denying the usefulness of this approach, in this paper I will outline the case for the alternative ecological approach. I will show how linguistic cueing events in some selected literary examples are grounded in multimodal experience, including tactility, its invariants and transformations in the en-minding of human selves. While offering some reflection on Shklovsky’s (1917/1965) idea of ‘making strange’ (in Russian, *ostraneniye*) in verbal art, I will argue that verbal art

invites us to experiment with new ways of becoming, new ways of being, and new modes of interactivity that enable experimental transactions and weavings of selves, experiences, other living creatures, things, and patterns of entextualized wordings across places and times (Kehbel, 2015). Familiar, habitual 'language stances' (Cowley, 2012), the patterns of wordings that support these, and the multi-modal experiences that they afford selves can be interrogated, subverted, renovated, transformed and/or replaced with others that have the potential to transform how our sense-saturated transactional weavings of selves, living beings of all kinds, texts and experiences affect us individually and collectively. Literary authors often invite their readers to reconsider and reevaluate their habitual language stances and to experience the world through a reorientation to unfamiliar stances that have been backgrounded or are absent from the familiar stances that their languaging and its meaning potentials afford. Rather than new ways of 'representing' experience, I argue that verbal art challenges us (or has the potential to do so) to intervene in and experiment with the invariants of experience and their transformations in new ways. Experimentation opens up new ways of focusing on, accessing and reflecting on aspects of experience that our habitual language patterns and associated self-stances background or deny. The wider ecological implications for our relations to other living forms will also inform the discussion.

Functions and Pragmatic Aspects of English Nonsense

Natalia V. Ursul
National Research University 'Higher School of Economics'

One of the central foci of research on language over the last several decades has been the study of linguistic anomalies, known as linguistic nonsense. The theoretical base of the nonsense phenomenon is rather eclectic. Nonsense may be used by logicians to describe some contradiction in a system, by scientists to describe statements which supposedly do not tally with the known facts, by modern philosophers to describe sentences which seem to them to depart from the rules for making sense in the use of language. Ordinary people use the word 'nonsense' in connection with situations or statements which do not conform to the facts as they are generally held to be, or which, more simply, are taken to be untrue. Nonsense in linguistics is a relatively new phenomenon, it became an object of study in linguistics in the mid of the XX century. The interest in studying various deviated patterns is stipulated by the fact that they play an important role in explaining language mechanisms and cognition processes. Even more, the anthropocentric paradigm of human knowledge stresses on the human factor in the language. From this view, a person intentionally selects certain standard or nonstandard speech patterns as expressive means. The present research aims at demonstrating how it is possible to make sense out of nonsensical expressions. Understanding how nonsense is used may help us

better comprehend how people think, how they make sense of the world and each other.

Do Do Do, The The The: Interactivity and Articulatory Suppression in Mental Arithmetic

Frédéric Vallée-Tourangeau
Kingston University

Doing long sums in the absence of complementary actions or artefacts is a multi-step procedure that quickly taxes working memory; congesting the phonological loop further handicaps performance. In the experiment reported here, participants completed long sums either with hands down—the low interactivity condition—or by moving numbered tokens—the high interactivity condition—while they repeated 'the' continuously, loading the phonological loop, or not. As expected articulatory suppression substantially affected performance, but more so in the low interactivity condition. Independent measures of basic arithmetic skill and mathematics anxiety moderated the impact of articulatory suppression on performance in the low but not in the high interactivity condition. These findings suggest that working memory resources are augmented with interactivity, underscoring the importance of characterizing the properties of the systems as it is configured by the dynamic agent-environment coupling.

Framing Volte-Face: The Description-Experience Gap in Risky Choice Framing

Gaëlle Vallée-Tourangeau
Kingston University

Building upon the description-experience gap, we examined whether the classical framing effect observed with the Asian Disease problem could be reversed when people make decisions from experience. Ninety-five university students were randomly allocated to one of three conditions: Description (where the problem was presented on paper), Sampling (where the participants were allowed to sample through the outcomes presented as a pack of cards) and Interactive (where the participants were invited to spread out all possible outcomes in a sample) and made three gain-framed choices and three loss-framed choices, with two filler tasks after the first three choices. The results revealed a significant interaction effect between framing and choice condition. In the Description choice condition, participants were more risk-seeking with loss-framed problems. This pattern was reversed in the Sampling choice condition where participants were more risk-seeking with gain frames. Finally, the Interactive choice condition resulted in a classic pattern of framing effect, whereby people were more risk averse in the domain of gains. The discussion focuses on the implications of these results for the description-experience choice "gap" and call for a better understanding of the role interactivity may play in fostering a richer representation of outcome probabilities in risky choices.

Language as Participatory Presencing

Jasper van den Herik
Erasmus University Rotterdam

What is it we *do* when we have a conversation? Orthodoxy claims that we exchange *representations*. However, enactivist approaches to cognition (Stewart *et al.* 2010) and distributed approaches to language (Cowley 2011), amongst others, forcefully criticise representationalism. This paper aims to provide a phenomenological, non-representational account of languaging as *participatory presencing*. I start from Noë's (2012) phenomenological account of *presence*. He observes that what is present exceeds what is strictly perceptible. When we look at a tomato, for instance, its back is present. This presence is achieved (i.e., something we do) through *skills of access*, or practical sensorimotor understanding. Through moving my head, or the tomato, I can bring the back into view; similarly, even your friend at the other side of the world can be present to you because you can call her (and she can call you). Presence therefore always transcends immediate actuality, as it is grounded in the interplay between our active corporeity and the sociomaterial world (Patočka 1998). Moreover, there is always a whole field affordances (*possibilities* for action) that is present to us (Rietveld & Kiverstein 2014). I propose that we can understand conversation as shared present-making, i.e., participatory presencing. What we say then, is understood as 'mind-guiding pieces of voicing' (Bottineau 2010) that allow for attunement of what is present for participants – i.e., mutual modulation of fields of affordances – and therefore, what they can do (together). For instance, when I ask you to pass me the salt shaker (and you understand me), I make the salt shaker present to you. That is, we create a situation in which the salt shaker is present to both of us (though not necessarily in the same way; shared presence can be complementary). This account of participatory presencing shows how languaging is grounded in phenomenology, whilst at the same time elucidating the social aspects of presence.

Materiality and Meaning: The Case of the Voice

Theo van Leeuwen
University of Southern Denmark

This paper will discuss the connection between the materiality of the voice and the way the voice is used to make meaning, with special attention to the role of audio technology in this process. It will take a developmental approach, showing how audio technology - from the microphone and the loudspeaker to contemporary digital voice enhancing technology - has uncoupled aspects of vocal production from their physical limitations, how iconic actors and singers have used the affordances of technology to develop a new semiotics of the voice (Neumark *et al.*, 2010), and how technology has subsequently enhanced as well as extended the physical limitations of human vocal production, while yet needing to remain connected to the firsthand bodily experience of humans as speaking and singing beings in order to function as part of the

meaning-making process. In his widely quoted essay 'The Grain of the Voice', Roland Barthes (1977: 179), discussing the singing voice, opposed 'everything in the performance which is in the service of communication, representation, expression' to 'the materiality of the body speaking its mother tongue'. While it is true that the voice is the embodiment of language, it is not true that this is opposed to 'communication', 'representation', and 'expression'. There is no divide between the materiality and the meaning of the voice. On the contrary, the voice and its meanings can only be understood on the basis of our bodily experience, and vocal semiosis can only be explained by paying close attention to the physicalities of articulation. Speech is material and experiential as well as semiotic and social, and it remains so in the age of digital voice enhancing technology.

Dynamical Phase Transitions during Collaborative Problem Solving Interactions

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Multiple theories of problem solving hypothesize distinct qualitative phases. However, limited research has attempted to identify when transitions between these phases occur. We integrate theory on collaborative problem solving (CPS) with dynamical systems theory. In particular, when a system is undergoing a phase transition, it should exhibit a peak in entropy. Communications from 40 teams that collaboratively interacted to solve a complex problem were coded to indicate problem solving processes. We applied a sliding-window Shannon information entropy technique to each team's communications and specified criteria for: (a) identifying points that qualify as peaks and (b) determining which peaks were robust. We found that a proportion of entropy peaks were robust in all teams and that the relative occurrence of communication codes varied significantly across phases. Peaks in entropy thus corresponded to qualitative shifts in team's CPS communications providing empirical evidence that teams exhibit phase transitions during CPS. This work lays the theoretical and methodological foundation for an improved understanding of phase transitions during CPS, specifically, and during human interaction, more broadly.

The Ecological Niche of Supervising in Higher Education

Line Brink Worsøe
University of Southern Denmark

This paper is concerned with how cognitive agents construe the ecological niche of supervision in higher education. By investigating two cognitive agents (i.e. supervisor and supervisee) in a supervision process, the paper explores how we analytically deal with various timescales in the investigation of the agents' distributed cognitive construction of a unique concept 'poetic sensibility'. The main purpose of the paper is to

investigate how to treat data from supervision sessions in higher education within the framework of the ecological niche of supervision: how do cognitive agents interactively navigate in the meshwork of various (local and non-local) timescales by establishing trajectories as set of regularities between time t and $t+1$ by appropriating (or co-creating) a wording ('poetic sensibility') that becomes a semiotically saturated material anchor affording futurity? The source of data is from a large corpus of video recordings of supervision session within higher education between a professor and a master student writing her MA-thesis. The hypothesis is founded on inductive observation of the sessions as a whole series of events (the non-local perspective) and investigated through grounding of unique cognitive (local) events on the basis on material anchors (Hutchins, 2005; Kirsh, 2013; Torre, 2014), drawing attention to the construal of the concept 'poetic sensibility'. In my investigation, I rely on the concept of interactivity understood as *sense-saturated coordination that contributes to human actions* in the real-time flow of co-existence (Kirsh, 1997; Steffensen, 2012, 2013; Pedersen, 2012; Vallée- Tourangeau et al., 2011) within the framework of Distributed Language and Cognition. More specifically the dialogical and reflexive aspects of 'learning' through supervision in higher education will be investigated by the use of the Cognitive event analysis (CEA) (Steffensen, 2013; Pedersen, 2015). The analytical method has its merits in its ability to pivot on rapid timescales of human coordination.

Wayfinding Between Space and Place: How Mobile Apps, People and Environments Move Together?

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In this paper, we will provide an account of the designing and use of a place-based mobile app for the better understanding of cognition and communication in the wild. We look at how language learners realize values (take action) when they are situated in sociocultural material-laden spaces. Mobile technologies have the potential to immerse and attune learners to enviroing features, such as signs, terrains, organisms, people. Mobile devices, such as 3G and 4G iPads with embedded GPS can take content to the social spaces that provide clues, prompt challenges and "push" for actions. A design with these features in the guidelines is an a priori for new learning to take place. The notion of creating a mobile-app that helps learners to be more connected to "a place" grew out of an emerging theoretical rethinking of cognizing as an interactivity with value-laden material artifacts and other people (Cowley, 2011, Steffensen, Vallée-Tourangeau, F., & Vallée-Tourangeau, G., 2016, Thibault, 2011; Zheng, 2012; Newgarden, Zheng & Liu, 2015). These approaches are collectively called EDD (Ecological, Dialogical and Distributed) perspectives by Zheng and Newgarden (forthcoming). In addition, literature on place/space in which "'space' is more abstract than 'place' (Tuan, 1979, p. 6) and viewing place as a dynamically on-going taking-place (Ames, 2011) informs design, data collection and analysis. In this paper, we give an account of: 1. how the design product of a mobile game: *Guardians of the Mo'ō (Mo'ō)* came to being by applying EDD perspectives; and 2. how transformation between place and space takes place during gameplay. Furthermore, drawing from Yi-Fu Tuan (1979), who essentially depicts a philosophy of place that is experienced, we argue the necessity for language learners to experience the ongoing and evolving dynamics between space and place so that they can also become contributors and care-takers within a community



Workshops

A. Distributed Intelligence Analysis (Chris Baber, Wednesday 29 June, 09:00 – 11:00, TK401)

This workshop will explore the ways in which Intelligence Analysis (by which I mean the use of information by analysts to investigate criminal activity) is influenced by the artefacts and representations that analysts employ. The overall aim is to consider how meaning is constructed through the interactions between analysts and these artefacts, and between analysts and each other. Using a simple exercise in which you work in small teams with fragments of an overall set of 'intelligence materials', you will try to work out how a drug-smuggling operation operates and decide how to arrest. As the information available to you will be fragmented, partial and not always up to date, you will need to make sense of the available information and determine possible explanations and courses of action. Through the exercise and discussions, we will better understand how sense-making is a form of Distributed Cognition in which 'thinking' spreads over the representations we create, the artefacts and explanations we share, and the plausible explanations that we construct.

B. Linguaging, Translanguaging and Implications of Learning Languages (Dongping Zheng, Wednesday 29 June, 09:00 – 11:00, TK402)

This workshop/symposium aims to strengthen the theoretical grounding of recently widely used concepts of translanguaging in applied linguistics in the spirit of ecological, dialogical and distributed (EDD) perspectives. Both Linguaging and Translanguaging have the potential of bridging the current divided attention to human development in other languages, second language acquisition and second language use. The division can be traced to the Cartesian tradition of relying on the brain as the seat of cognition, and to Chomsky's competence and performance concepts. In applied linguistics, these western dominated traditions of doing science are reflected in ways second Language learners are studied. The ways in which research is conducted view language learners as if having two separate tracks of life: life as simulated in the brain, life as identified in the social milieu. It is even more disconcerting that the field is still heavily influenced by researchers of ESL/EFL, who use these western scientific methods to study learners of English from cultures steeped in Eastern philosophy. The resulting research findings are called into question from the EDD perspectives. On the EDD view, language is something we do together as part of social coordination. In doing things together, we language; When more than 2 languages are involved, we translanguaging. In the social, technical, multilingual 21st century, we do not differentiate linguaging and translanguaging in theory, thus defining the human dynamic, dialogical and emergent co-activity in language. However, differences may be found in 2nd order language in learners' developmental histories, experiences with cultural norms and linguistic abstracta. Interactivity between brains, bodies and the external environment is thus the key to human learning and cognition. However, Distributed Language does not dispute the necessity for linguistic abstracta, which become second-order constructs that include lexicon-grammar, wordings and sociocultural norms. Instead of treating linguistic cognition as a matter of processing abstract forms, Distributed Language acknowledges that abstracta stabilize in the long scale of human development. By so doing, we seek to understand language in terms of how these cultural patterns are integrated with wordings in real time, using first-order linguaging dynamics.

C. Temporality in Interaction: The Relative Timing of Speech, Gesture and Action (Joanna Rączaszek-Leonardi and Johanne Bjørndahl, Thursday 30 June, 09:00 – 11:00, TK402)

The workshop's aim is to provide space and time for discussion of research and research ideas that are concerned with the timing of action, gesture and speech in interaction. We assume that in many mundane situations **interaction is not easily divisible into 'conversation' or 'dialogue' on one hand and gestures and action involving other semiotic resources (e.g., cultural artifacts) on the other**. Rather, action and sense making takes place in temporally unfolding interaction, incorporating these different semiotic resources. Thus, investigating their structuring power as resources for thinking and action requires recognizing the temporal patterns of various 'moves' in interaction. The importance of this relative timing can be easily seen in at least two contexts: 1) In social development, where careful timing of speech in co-action and enveloping early vocalizations in caretaker's actions helps a child to detect a) the meaning and the directive power of language as interactive affordance and b) the importance of the external world of objects and events. 2) In on-line situations of collaboration, where the way the speech and object manipulation are embedded in action and co-action indicates their constitutive character as multimodal events. Both language and involvement of other semiotic resources provide vital constraints in co-action, thus they should appear in specific points of doing things together. Recognition of these points and the role of relative timing of speech and object manipulation will be of major concern. In both contexts not only the relative order of speech, action and gesture are important but also their precise timing, which in itself may have a controlling role. A prolonged action, a pause, or lack of action thus can also have a meaningful effect. These timings will be congruent with the acquired culture-specific scripts but, at the same time, allow for flexibility in every new instance of interaction, providing constraints and open-ended projections in the interactional dynamics.

Constructing Communication: The Development of Coordination in Mother-infant Dyad Vocalizations

Giuseppe Leonardi¹, Iris Nomikou², Katharina Rohlfing²

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When mothers react to infants' vocalizations a feedback loop is established, which encourages infants in producing more of the same kind of vocalizations (Warlamont et al., 2014). At the same time, infants engage in a rudimentary form of conversational turn-taking coordinating their vocal production with that of their mothers (Gratier et al. 2014). Thanks to the day-by-day experience of conversational temporal contingencies in this feedback loop, it is argued that infants learn new speech sounds as well as their use in an exchange with other persons. Experimental data corroborate this view by showing that children can modulate their vocalizations according to the contingent input (Goldstein & Schwade, 2008). This means that part of the communication and interactional abilities in infants develops gradually, building upon such continuous real life episodes in which interaction is enacted, and relying, possibly, in characteristic ways, on the timing of the vocalizations. Since Warlamont and coll. (2014) also show that infants' speech-related vocalizations and non speech-related ones are treated differently by the mothers, it is well possible that those differences will be evident in the specific patterns of their relative timings as well. In this study we considered a simple index of communicative behavior (the start and end times of a vocalization) and analyzed its temporal structuring during a typical daily exchange

between mothers and infants, evaluating as well how the exact nature of the vocalization (speech-related vs. non speech-related) affected such structuring. The dyads were recorded during a routine activity of diaper changing in a familiar environment, with no particular restrictions in terms of time or behavior, which can hence be assumed to reflect ecologically valid data. Recordings of this kind of behavior were collected at different moments in time (at 3, 6 and 8 months of infants' age), which allowed us to follow the developmental curves of relative synchronization and contingency of dyads' vocalizations, and to show the process of progressive attunement and coordination of the dyads. While we expect to see that early in the developmental process mainly mothers would answer promptly and consistently to the infants' vocalizations – and especially to speech-related ones (Warlamont et al., 2014) – we hypothesize that later we should also be able to see a more active participation of infants, hence registering the first emergence of a dyadic proto-conversation.

Accumulation of Embodied Relationship Histories: Tactile Negotiation of Space

Julia Katila

University of Tampere

The presentation provides a case study of *non-verbal tactile negotiation of space* in the context of joint group activity of non-native Finnish mothers and their children. The focus of interest is on how the group-members accommodate turn-taking and the usage of the space within the joint-action of drawing a shared

life-line of each group member's life events. The aim is to investigate how individual actions not only are co-constructed by assembling diverse culturally shared materials such as semiotic recourses of language, semiotically charged objects (Goodwin 2013) and culturally standardized body postures (Schefflen 1964), but also draw on the embodied relationship histories – *the manners in which certain specific bodies have co-inhabited the tactile lifeworld*. These temporally varying histories of embodied positions provide a re-usable library of possible body-trajectories and patterns of being together such as conventions for proximity and touch (in the scope of one-on-one and group relations). Such manners of being reflect both the historical “corporeal *hexis*” (Bourdieu 1991) of each single body, and the life-histories of certain bodies being together. In Streeck's (Forthcoming) words, “the posture configurations that appear standardized or habitualized may turn out to be conventions of a singular relationship, habits that *particularize* the relationship between two people, rather than instantiating a cultural program”. This culture- and relationship-based accumulation of embodied relationship histories provides a means for the participants to anticipate and inhabit others' movements in subtle, fine-tuned synchrony. Understanding embodied action in terms of this kind of constant tactile intercorporeality with separate, all the time ongoing but temporally varying frames also enables methodological possibilities to approach cognition as something entirely embodied and shared.

Temporality in Interaction: Managing Cognitive Challenges in Emergency Medicine

Sarah Bro Trasmundi and Sune Vork Steffensen
University of Southern Denmark

In emergency medicine, effective and efficient diagnostic practices depend on medical knowledge as well as on the ability to coordinate in action, so misunderstandings are avoided. Timing is crucial as coordination of speech, gesture, gaze and movement within a team happens simultaneously with medical hypothesis generation. In this workshop we present two cases of how timing in medical teams matters for managing cognitive challenges. The analyses are based on video recordings from an ethnographic study on an emergency medicine department. The first case involves a medical team that discusses medical procedures when a nurse blocks the visual array between the medical team and the patient. We

investigate how the medical team moulds its optic array through inter-bodily timed actions. We show how the team's movements constitute a joint agency that implies the maintenance of an optimal visual system for all implied practitioners. The second case focuses on how the team responds to a patient's request for dialogue through the team's timed coordination of gaze. Interestingly, the actions of a medical student, who is not fully socialised into the medical arena, within this team deviate from the rest of the team members'. Her actions are uncoordinated and she becomes an observer of the team's sense-making processes. We argue that expertise can be explained as the ability to instantly know when and where to pick up on changes in the layout of affordances (a patient's interruption for instance). As healthcare practitioners, given their reciprocal relationship, coarticulate, coact and coordinate, they become bound up with each other's distinctive histories and ways of performing as professionals. As this happens teams co-modify and co-adapt in situ.

The Relative Timing of Speech and Action in Collaborative Problem Solving: A Qualitative Case Study

Johanne Stege Philipsen (Bjørndahl)
University of Southern Denmark

It has been argued that gesture, speech, and action are interactional resources, that incorporate multiple semiotic fields in sense making activities in face to face interaction (Goodwin 2000, Goodwin 2003, Goodwin 2013). The relative timing of these multimodal activities in interaction is crucial, and establishes how sense making in interaction unfolds and is negotiated. Though gesture is also in some cases produced more independently of speech, in many common situations, gestures are timed so that they occur during the production of one or more words in such a way that they come to emphasize, structure, or elaborate on those parts of an utterance (McNeil 1992, Goldin-Meadow 1999). Thus, in such cases, the timing of speech constrains the production of gesture in social interaction. However, the temporality of gesture and action is also, on the other hand, constraining the timing of speech production. In this session, we investigate some qualitative examples of how speech, gesture, and action mutually constrain one another in a social setting that involves jointly making sense of shared materials and objects.

D. From Computers to Cultures: A Cross-disciplinary Study of the Concept of Interactivity

(Orgainser: Gaëlle Vallée-Tourangeau, Thursday 30 June, 09:00 – 11:00 TK401)

The study of interactivity spreads over many disciplines and topics, from human-computer interactions, interactive learning, interactive communication, cross-cultural interaction, interaction management, interactive marketing or interactive decision-making and problem-solving, to name a few. Yet, it remains an elusive concept which may be used to describe processes taking place in different systems (cultures, organisations, groups, dyads, human-artefact systems) with different social, cognitive and behavioural outcomes. This workshop will bring together scholars from different disciplines with the objective to share and discuss different approaches to study interactivity and its impact on cognition and behaviour.

Joint Inference in the Creation of Conventions

Jennifer Misyak
Warwick Business School
09.00-09.20

It seems evident that the origins of any cultural innovation has to be a 'first step' which is itself not based on such cultural innovation. So how do cultural conventions, such as those exemplified by human communication systems, get kick-started? Addressing this question requires going beyond a traditional individualistic viewpoint to a more interactive 'we-thinking' stance. To illustrate, this talk reports on a recent experiment, investigating the creation of communicative conventions in a non-linguistic experimental task. We developed a novel computer game which simulated a simple 3D-environment, and in which interacting participant-dyads could not use any pre-existing conventions or established signs to coordinate towards a common goal. Nonetheless, we observed participants 'instantaneously' creating communicative conventions from the most minimal possible signals. Furthermore, these conventions flexibly shifted from moment to moment in response to changes in shared task constraints. Notably, signals of identical form were able to successfully 'flip' meanings, thereby carrying contradictory messages from trial to trial. Participants' behaviour in our experiment implicates what we term 'joint inference: social interactants are inferring, in the moment, the most sensible communicative convention in light of their common understanding. We suggest that this crucially joint aspect to social parties' inferences is fundamental to processes of communication. The essence of this insight also informs the core of a more elaborate formal framework of ours ('virtual bargaining') for understanding social interaction—and may help to elucidate not only how humans are able to coordinate their behaviour, but how human communicative and cultural systems may emerge and evolve.

Human-computer Interaction

Anna Cox
UCL Interaction Centre
09.20-09.40

Human-computer interaction (HCI) is an area of research and practice that emerged in the early 1980s. Its roots lie at the intersection of cognitive science, human factors engineering & computer science. HCI

has expanded rapidly and steadily for three decades, attracting other academic disciplines. In this talk I will give a brief overview of HCI as an interdisciplinary field, charting its history and outlining what Rogers (2012) has described as the classical, modern and contemporary theories that contribute to the study and design of interaction. I will outline some of the current debates about what interaction is, as the technology we use moves away from the desktop and becomes increasingly embedded into the fabric of our lives.

A Lot to Answer for: Interactivity and Responses to Clarification Requests

Christine Howes
University of Gothenburg
09.40-10.00

Turn construction in dialogue is a fundamentally incremental and interactive process and the coordination of common ground is crucial to understanding. However, although the establishment of common ground is known to be influenced by a number of factors in dialogue, such as the context in which information was mentioned, many accounts assume that interaction plays only a peripheral role. Additionally, contributions to dialogue are often fragmentary or incomplete and these incomplete contributions may be grounded, clarified or subsequently completed. Despite these observations, there has been little work that experimentally tests the influence of common ground on the interactive building up of meanings in dialogue at the sub-sentential level, or to what extent we take account of shared context when we are constructing a turn. This talk will discuss some experiments that systematically introduce spoof clarification requests (CRs) into an ongoing text dialogue. These CRs target a noun phrase (NP) that has either previously been talked about in the current dialogue (given information) or not (new information) and appear to come from either the other person in the conversation or an external source. Results show that the response depends on whether the target of the CR should be in the common ground or not, which is affected both by whether the targeted NP is given or new and whether the apparent source has been involved in the joint action of building common ground. A formal model of dialogue needs to take into account not just what is said and how, but also who is actively involved in the process of doing so.

Cognitive Interactivity and the Systemic Thinking Model (SysTM)

Gaëlle Vallée-Tourangeau
Kingston Business School
10.00-10.20

In this talk, I will review the limitations of the classical information processing model for explaining how cognitive events emerge and show that we could better understand how people actually think by reinstating their hands, and allowing them to manipulate information both in their mind and in their immediate environment. Such manipulations make a difference to the way people think. I will introduce a new model of cognition, the Systemic Thinking Model (SysTM) which builds upon the classical information processing model to account for this difference. SysTM introduces two new concepts: the concept of cognitive interactivity to refer to the emergence of cognitive events from the

meshing of mental processing with the transformative actions of a thinking agent on her immediate environment; and the concept of affordance pool to refer to a short term storage of action possibilities in working memory conceived as sitting alongside the classical visuo-spatial sketchpad for imagery and the phonological loop for sounds. I will conclude this presentation by illustrating how SysTM can be used to derive new predictions and guide the study of cognitive interactivity.

Panel Discussion: What is Interactivity and How Does It Impact Cognition and Behaviour?

Laure Cabantous (Chair)
Warwick Business School
10.20-11.00

E. Reducing the Mystery behind Gibsonian Information (Sabrina Golonka and Andrew Wilson, Friday 1 July, 09:00 – 11:00, TK402)

The concept of affordances has travelled beyond the narrow field of perception-action to influence how we think about other behaviours such as those related to language; the concept of Gibsonian information has had less of an impact. This is a shame because information is the link between ourselves and affordances. Affordances (and other perceivable properties and events) can have no psychological power without information to specify them. This workshop aims to reduce some of the mystery surrounding Gibsonian information by discussing the process of identifying and validating new information variables. We will then discuss how this process can be extended to apply to language-related behaviours.

F. Distributed Thinking in Organizations (Davide Secchi and Emanuele Bardone, Friday 1 July, 09:00 – 11:00, TK401)

In distributed (systemic) cognitive processing manipulation of external resources (e.g., artifacts, language, social resources, cultural resources) is key to cognition. Some of these external resources are better accessible when the individual shows certain characteristics. For example, to access external social resources one needs to have a positive attitude towards stimuli coming from social channels. In an organization, effective access crucially depends on the reference group, its climate, and interaction dynamics. What is it that makes individuals deal with social resources more effectively? This workshop engages participants in discussing the role that an inquisitive mind, that is a mind prone to inquiring, positively affect the attitudes towards others and thus the possibility of enhancing creativity.

G. The Genesis of Graphic Skill – Phylogenetic and Ontogenetic Perspectives

(Christian Mosbæk Johannessen and Theo van Leeuwen, Saturday 2 July, 10:00 – 16:00, London Knowledge Lab, 23-29 Emerald Street, London WC1N 3QS).

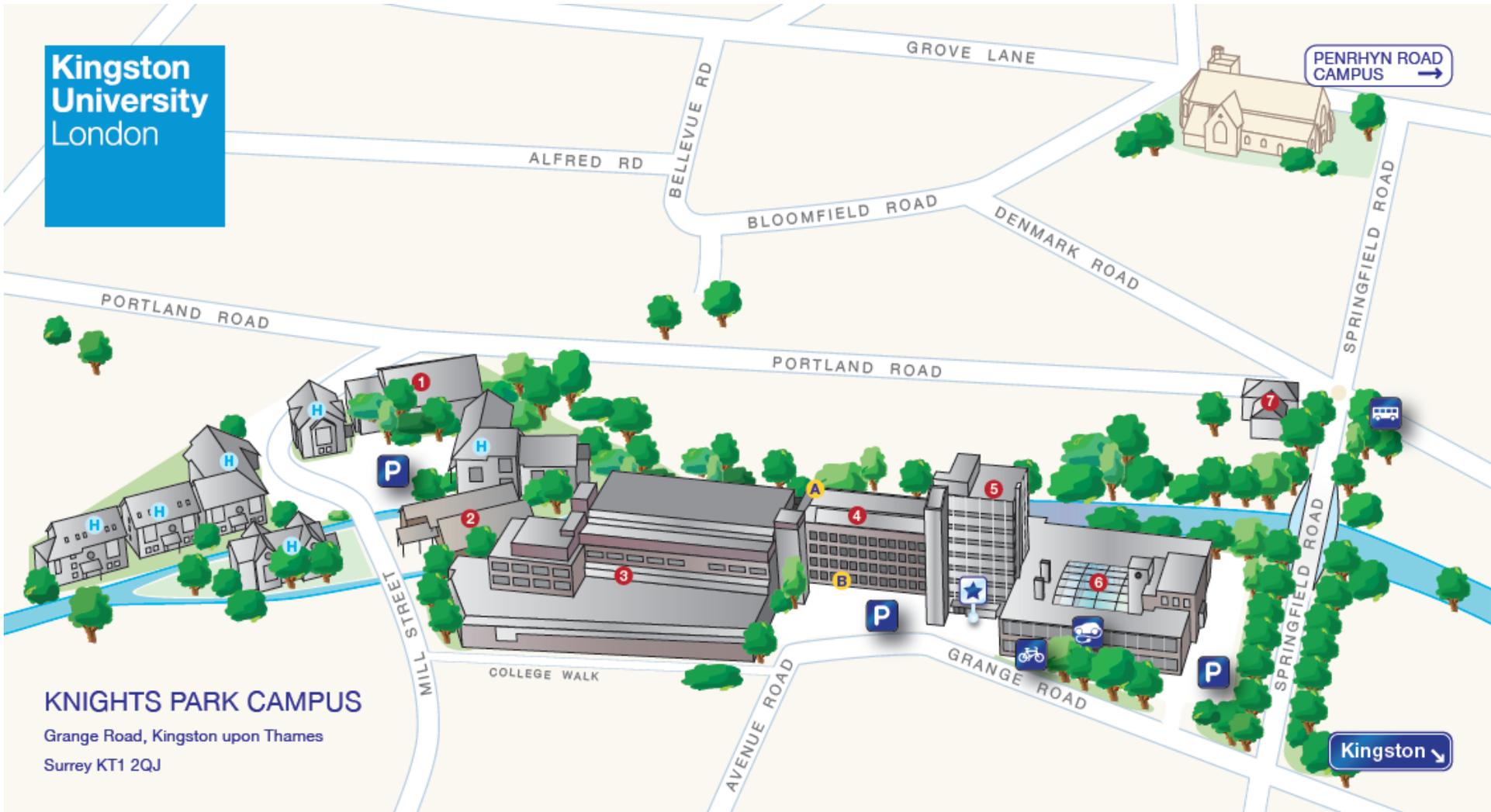
Graphic traces - 'enduring marks left in or on a solid surface by continuous movement' (vis à vis Ingold) - or derivations of them are everywhere around us. On our watches they parcel time into periods for work, rest, eating and playing. On our roads they organize intersections and mark off carriageways from turning lanes and exits. And in our urban environments they embellish almost every surface. Yet, despite their pervasiveness in human culture, strikingly little research has effort has gone into studying their role in whole-bodied, sense-saturated, meaningful coordination and attunement between human agents. The aim of the research cluster is to place the study of graphic traces closer to the core of contemporary humanities. More specifically, it aims to study (i) the processes of making and perceiving graphic traces, (ii) the graphic traces themselves (as texts) and (iii) the relationship between articulatory dynamics and traces. The theme of this second

meeting of the research cluster will be *the emergence of graphic skill on different temporal scales. When, how and why did skills of graphic trace making emerge in our species, and when, how and why do they continue to emerge in individuals?*

10:00 – 10:15	Welcome
10.15 – 11.00	Lambros Malafouris (Keble College, Oxford University) talks about the phylogeny of graphic enskillment from the point of view of Material Engagement Theory
11:00 – 11:45	Lesley Lancaster (University of Manchester) talks about the ontogeny of graphic enskillment in children
11:45 – 12:45	Lunch
12:45 – 13:30	Howard Riley (Prof. Emeritus, Swansea College of Art), talks about the ontogeny of graphic enskillment in experts
13:30 – 14:15	Paul J. Thibault (Agder University) attempts to tie the ends together by discussing graphic trace making as a catalytic process
14:15 – 14:30	Tea
14: 30 –15.30	Workshop. The organizers provide case material that will hopefully spark a little debate.
15:30 – 16:00	Round Table



Kingston University, Knights Park. All presentations and workshops (A-F) take place in the Tower Block (off Grange Road)



- 1 Avionics building
- 2 Stanley Picker Gallery
- 3 New Extension
- 4 Link Block

- 5 Tower Block
- 6 Learning Resources Centre
- 7 KU Nursery

- A Bar
- B Canteen
- H Middle Mill (Halls of residence)
- University bus stop

- P Staff and disabled parking only
- Electric car – charging point
- Cycle parking
- Main reception