Society for Text and Discourse
Seventeenth Annual Meeting
University of Glasgow, Scotland
July 8th to July 11th 2007

PROGRAMME

All events take place in the Western Infirmary Lecture Theatre building, consisting of the Lecture Theatre, the Foyer and the Seminar Room.

Paper presenters and poster presenters should look at Information for Presenters

SUNDAY 8th JULY

2.00 pm: Foyer of Western Infirmary Lecture Theatre:
Commencement of Registration

3.30-4.30: Lecture Theatre - Members' business meeting

4.30-4.45: Break

4.45-6.15: Lecture Theatre - Welcome and notices, followed by Plenary 1

INVITED SPEAKER:
Fernanda Ferreira, "Good Enough Language Processing".
Introduced by Tony Sanford

6.15–8.15: Foyer of Western Infirmary Lecture Theatre:
RECEPTION and POSTER SESSION 1

MONDAY 9th JULY

9.00–10.30: Lecture Theatre - Plenary 2

INVITED SPEAKER:

Susan Goldman, "Multiple Source Comprehension: What is it, Why is it important, and How do we Assess it?"

Introduced by Art Graesser

10.30–11.00: COFFEE

11.00-12.40: Parallel Session A: Lecture Theatre.

Symposium: The Neuroscience of Discourse

Organised by Tony Sanford
Chair: Tony Sanford

11.00-11.25: Jos J.A. Van Berkum. Discourse electrified: ERP studies on discourse-level language comprehension.

11.25-11.50: Dr. Evelyn C. Ferstl & D. Yves von Cramon**.** Time, space and emotion: fMRI reveals information specific activation during text comprehension.

11.50-12.15: Arthur M. Glenberg, Shirley-Ann Rueschemeyer, Michael P. Kaschak, Marc Sato, Luigi Cattaneo, Lucia Riggio, & Giovanni Buccino. Grounding language in sensorimotor systems revealed by fMRI and TMS.

12.15-12.40: Marcel Bastiaansen. Fast dynamics in the brain's language comprehension network.

11.00-12.40: Parallel Session B: Seminar Room.

Aspects of Dialogue

Chair: Alastair Gill

11.00-11.25: Natalie Person, Blair Lehman, & Rachel Ozbun. Pedagogical and motivational dialogue moves used by expert tutors.

11.25-11.50: Frederick G. Conrad & Michael F. Schober. Dialogue capability and perceptual realism in survey interviewing agents.

11.50-12.15: Max Louwerse, Ellen Bard, Patrick Jeuniaux, Gwyneth Lewis, Jie Wu, & Nick Benesh. Discourse processing through speech, eyes, face, and hands.

12.15-12.40: Markus Guhe, Ellen Gurman Bard, & Max Louwerse. Let's just not talk about this.

12.40-2.00: LUNCH

2.00–3.15 Parallel Session A: Lecture Theatre.

Embodied Cognition

Chair: Leo Noordman

2.00-2.25: Barbara Kaup & Jana Lüdtke. *The drawer is not yet open*: Action-compatibility effects with sentences that do not describe a movement but a state.

2.25-2.50: Carol J. Madden & Diane Pecher. The force behind language: Are concrete and abstract sentences understood in terms of underlying force patterns?

2.50-3.15: Manuel de Vega & Mabel Urrutia. Counterfactual meaning could be embodied. Evidence from action sentence compatibility effect.

2.00-3.15: Parallel Session B: Seminar Room

Development and L2

Chair: Ann Britt

2.00-2.25: Jennifer Wenner. Storytelling ability in 4- to 9-year-old children: Correlates with parent contributions during reminiscence.

2.25-2.50: Roberta Corrigan & John Surber. How pictures improve cohesion in narrative text written for young children.

2.50-3.15: Yukie Horiba. Task and strategic processing in L2 text comprehension.

3.15-3.45: COFFEE

3.45-5.00: Parallel Session A: Lecture Theatre.

Causality and Related Issues

Chair: Jennifer Wiley

3.45-4.10: Connie Qun Guan. The activation and long-term memory of predictive inferences: The impact of reading strategy and distractive causal elaboration.

4.10-4.35: Leo Noordman. Causality in cognition and discourse processing.

4.35-5.00: William H. Levine, Heidimarie Blumenthal & Joel A. Hagaman. The role of causal inferences in the maintenance of goal-related information during narrative comprehension.

3.45-5.00 Parallel Session B: Seminar Room.

Computational Issues

Chair: Art Graesser

3.45-4.10: Darren Gergle, Carolyn P. Rosé & Robert E. Kraut. Computational modeling of reference in the presence of shared visual information.

4.10-4.35: Patrick Chipman. An analysis of the quality of AutoTutor's student modeling algorithms.

4.35-5.00: Ladislao Salmerón, Thierry Baccino & Jose Canas. How overview processing strategies affect comprehension in hypertext.

6pm: CIVIC RECEPTION, at GLASGOW CITY CHAMBERS

TUESDAY 10th JULY

9-10.30: POSTER SESSION 2, COFFEE served from 10.00

10.30 – 12.10: PARALLEL SESSION A: Lecture Theatre

Symposium: Reading (and Listening) to Learn about the Physical Sciences: A Developmental Perspective

Organised by Nancy L. Stein.
Chair: Tony Anderson

10.30-10.55: Nancy L. Stein, Marc Hernandez & Perla Gamez. Making the invisible visible: The conditions for the early learning of Physics.

10.55-11.20: Nancy Romance & Michael R. Vitale. Meaningful learning in science with reading comprehension and writing.

11.20-11.45: Arthur Graesser & Barry Gholson. Learning with conversational agents: Tracking, training, and talking about Physics principles and misconceptions.

11.45-12.10: Jennifer Wiley, Christopher A. Sanchez & Thomas D. Griffin. Designing for understanding: The impact of tasks and individual differences on learning science from the Web.

10.30-12.10 PARALLEL SESSION B: Seminar Room

Discourse Processing

Chair: Wietske Vonk

10.30-10.55: Ruth Filik & Anthony Sanford. When is cataphoric reference recognized?

10.55-11.20: Andrew J. Stewart, Judith Holler & Evan Kidd. Shallow processing of ambiguous pronouns: Evidence of delay.

11.20-11.45: Simon Garrod, Hamutal Kreiner & Patrick Sturt. Using cataphoric reference to test the automaticity of gender stereotype inferences.

11.45-12.10: Johanna K. Kaakinen, Taina Kinnari & Jukka Hyönä. On-line processing of written irony.

12.10-1.30: LUNCH

1.30-2.45: Lecture Theatre: Announcements, and Plenary session 3

INVITED SPEAKER:
Seana Coulson, "Constructing Meaning".
Introduced by Simon Garrod

2.45–3.15: COFFEE

3.15-4.55: Parallel Session A: Lecture Theatre.

Discourse Processing and ERPs
Chair: Jos van Berkum

3.15-3.40: Wietske Vonk, Herbert Schriefers, Roel Kerkhofs & Dorothee Chwilla. Discourse, syntax, and prosody: The brain reveals an immediate interaction.

3.40-4.05: Heather J Ferguson, Anthony J Sanford, Hartmut Leuthold & Christoph Scheepers**.** Counterfactual context effects: From eye-movements to Neuroscience.

4.05-4.30: Mabel Urrutia & Manuel de Vega. Counterfactuals in the brain. An ERP study.

4.30-4.55: John C. J. Hoeks, Petra Hendriks, & Gisela Redeker. Gricean Potentials: How the brain reacts to violations of the Maxim of Quantity.

3.15-4.55: Parallel Session B: Seminar Room.

Text Processing and Memory.
Chair: Max Louwerse

3.15-3.40: Aaron A. Larson, M. Anne Britt, Paul van den Broek & Panayiota A. Kendeou. Using the Landscape Model to predict argument recall.

3.40-4.05: Michael B. W. Wolfe and Kimberly A. Marshick. Processing and memory of information presented in narrative or expository texts.

4.05-4.30: Debra L. Long. Individual differences in the recollection and familiarity of text ideas.

4.30-4.55: Nicholas D. Duran, Philip M. McCarthy, Cedrick Bellissens & Danielle S. McNamara. What makes a text more or less difficult? Using Coh-Metrix to identify text difficulty.

WEDNESDAY 11th JULY

9.00-11.05: Parallel Session A: Lecture Theatre.

Symposium: Assessing Non-cognitive Constructs through Constructed Response

Organised by Matthew Ventura & Richard Roberts
Chair: Susan Goldman

9.00-9.25: Richard D. Roberts, Jennifer Minsky, Carolyn MacCann & Ralf Schulze. Noncognitive constructs: Theory, measures, and applications in Education.

9.25-9.50: Jeff Jancock. Deception and language use in the context of noncognitive assessments.

9.50-10.15: Alastair Gill. Text analysis techniques and identifying author personality in computer-mediated communication.

10.15-10.40: Arthur Graesser & Sidney D'Mello. Inferring emotions in tutorial dialogue.

10.40-11.05: Matthew Ventura, Richard D. Roberts & Carolyn MacCann. Item development and scoring of non-cognitive constructs using constructed response.

9.00-11.05: Parallel Session B: Seminar Room.

Individual Papers

Chair: Alison Sanford

9.00-9.25: Matthew S. McGlone & Maria del Carmen Guarddon Anelo. Agency and attitude in temporal language.

9.25-9.50: David J. Therriault & Evelyn S. Chiang. Narrative perspective: Which view should we adopt?

9.50-10.15: Christopher A. Kurby, Joseph P. Magliano & David N. Rapp. Hearing voices in your head: Activating representations of character voice across modalities.

10.15-10.40: Peter J. Glick & Michael F. Schober. Lexical content of self-deceptive speech.

10.40-11.05: Mija M. Van Der Wege. Comprehension of contrasting conceptual agreements.

COFFEE AND CLOSE

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PLENARY ABSTRACTS
(in order of presentation)

PLENARY 1

Good Enough Language Processing

Fernanda Ferreira
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My colleagues and I have argued that the language comprehension system creates syntactic and semantic representations that are merely "good enough" (GE) given the task that the comprehender must perform, rather than being detailed, complete, and accurate. In this address, I will review the original argument for GE processing, and I will present new evidence that supports the concept: First, local interpretations are computed which can interfere with global ones; second, the degree to which fully ambiguous sentences are assigned a shallow or full interpretation depends on the reader's goals; third, new findings based on the recording of event-related potentials (ERPs) show the use of simple heuristics rather than compositional algorithms for constructing sentence meaning; and finally, recent studies indicate that ungrammatical sentences are processed much like grammatical ones, and are assigned interpretations. I will conclude that the GE model of language comprehension is similar to approaches in decision-making which assume the use of fast and frugal heuristics, and that a fruitful direction for future research is to explore this connection more thoroughly.

PLENARY 2

Multiple Source Comprehension: What is it; Why is it important, and How do we Assess it?

Susan R. Goldman
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Multiple *source* comprehension reflects the reality that information comes in many forms, including verbal, nonverbal; static, dynamic; oral, written. Literacy for the 21st century requires the ability to make meaning within and across these varied sources. Doing so involves a variety of processes, including critical analysis of information within and across sources. The focus of this paper is on the development of assessments of multiple-source comprehension using an approach that involves a systematic process of specifying the knowledge and skills that constitute it, what counts as evidence of these knowledge and skills, and tasks that provide opportunities to collect that evidence. Findings are presented from initial empirical work that informs the assessment development. The assessments are intended to be used with upper elementary to middle school students (approximately grades 4 – 8), to be diagnostic and informative for teachers and students, and to shape opportunities to engage in multiple source comprehension.

PLENARY 3

Constructing Meaning

Seana Coulson
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Traditional models of language comprehension as a decoding process are argued to involve an over-attribution of the import of linguistic information, and an overly narrow view of the role of background and contextual knowledge. I will review a number of event-related brain potential (ERP) studies of language comprehension that reveal an early sensitivity in the brain response to global contextual factors. These findings are consistent with a view of linguistic information as prompting meaning construction processes such as the activation of frames, the establishment of mappings, and the integration or blending of information from different domains.

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SYMPOSIA ABSTRACTS
(Symposia in order of presentation)

Symposium: The Neuroscience of Discourse

Organiser: A J Sanford
Centre for Cognitive Neuroscience (CCNi), Department of Psychology
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Discourse electrified:
ERP studies on discourse-level language comprehension

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We've known for some time that electroencephalography can provide valuable information about the nature of the human language comprehension system. However, because using brain measures is difficult enough as it is, most language researchers have until recently limited their use of EEG to the comprehension of decontextualized single sentences. In my talk, I will review what we have learned from our initial attempts to study comprehension of sentences in a wider discourse (e.g., a piece of text) by means of event-related brain potentials. One thing we observe time and again is that listeners and readers extremely rapidly relate the words of an unfolding sentence to what the wider discourse is about. For example, if the meaning of a spoken word does not fit this wider context, the processing consequences show up in the EEG at some 150 milliseconds after the word's acoustic onset, and well before the word has been fully pronounced. Listeners and readers also very rapidly determine who is being referred to by expressions such as "the girl" or "he", sometimes within some 250-300 milliseconds. In addition, our work reveals that listeners and readers go beyond such rapid reactive word-by-word processing, and can actually use their knowledge of the wider discourse proactively, to predict specific upcoming words in real time as the sentence unfolds. Finally, the evidence suggests that listeners immediately work out to what extent the unfolding message fits with what they know about the speaker (or can infer from his or her voice). The moral of all this is that even though discourse-level computations are complex, 'high-level', and essentially open-ended, the human brain can use them to analyze and extrapolate linguistic input within a split second. I will argue that to keep track of the various processes involved, the time-resolved and multidimensional human EEG is a particularly useful source of information (see also Van Berkum, 2004, at www.josvanberkum.nl).

Time, space and emotion: fMRI reveals information specific activation during text comprehension

Evelyn C. Ferstl[1] and D. Yves von Cramon [2, 3]
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When comprehending stories, readers or listeners immediately set up a mental model of the contents, the situation model (Kintsch, 1998). This representation is an integration of the prior world knowledge with the language input. Thus, situation model building includes semantic processes, retrieval of general world knowledge, and the integration of various information sources into a coherent representation. This representation has been considered to be beyond the verbatim input. In particular, it is postulated to include information specific representations, for instance visual images of objects or spatial layouts of scenes (Kintsch, 1998; Zwaan, 2004). Neuroimaging provides the means to immediately assess these information specific representations by identifying brain regions involved during the comprehension of story information. Extending a previous experiment the present study used an inconsistency paradigm to investigate domain specific representations for emotional, temporal, and spatial information aspects. Spatial information was chosen because the importance of spatial properties for situation model building is well-known, and neuroimaging studies on navigation and visual imagery are available for comparison. Memory demands were minimized by using very short, two sentence stories. The hypothesis was that temporal and spatial stories would share the cognitive task demands, but differ with respect to the information aspect. Thus, shared activation was expected in lateral fronto-parietal regions related to executive functions, whereas the differential activation was expected to shed light on the information specificity of the situation model representation
The experiment presented here provided converging evidence for the claim that situation model processing is inextricably linked to specific, information dependent representations. Most prominent was the bilateral engagement of the parahippocampal region during the processing of spatial information, although the task did not require complex spatial reasoning or navigation. These results confirm the importance of information-specific representations and thus inform models of discourse comprehension. The interesting debate of whether these information specific representations are perceptually embodied (Zwaan, 2004) or whether they are dependent upon an intermediate verbal-propositional representation (e.g., Kintsch, 1998) needs to be explored in further studies.

Grounding language in sensorimotor systems revealed by fMRI and TMS

Arthur M. Glenberg[1], Shirley-Ann Rueschemeyer[2], Michael P. Kaschak[3], Marc Sato[4], Luigi Cattaneo[4], Lucia Riggio[4], & Giovanni Buccino[4]
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One of the claims of embodiment theory is that linguistic meaning is grounded in sensorimotor systems. For example, the simulation approach to language comprehension asserts that language becomes meaningful by simulating the content of a sentence using the same sensory and motor systems that might be used in dealing with the real events described by the sentence. This claim has been supported by behavioural work demonstrating interactions between language-based tasks and perception or action tasks.

The work that I will describe provides fine-grained support for the claim by demonstrating interactions at the level of neural systems. In one experiment using fMRI (see Rueschemeyer, Glenberg, Kaschak, & Friederici, submitted), we tested the fine-grain prediction that comprehending sentences describing visual motion (compared to static visual scenes) would selectively activate an area of cortex known to be used in analyzing visual motion, namely V5/MT. We observed this effect with a twist: modification

of activation in V5/MT was observed only for sentences describing action toward the listener (e.g., "The car drives toward you") and not for sentences describing motion away from the listener (e.g., "The car drives away from you"). In a second experiment (see Glenberg, Sato, Cattaneo, Riggio, Palumbo, & Buccino, in press), we used transcranial magnetic stimulation to probe the motor system during language comprehension. Previous work has demonstrated that single-pulse TMS over motor cortex activates the corticospinal pathway, and that this activation can be measured in muscles in the form of motor evoked potentials (MEPs). Pairing the TMS pulse with other stimuli (e.g., sentences) may produce significant variation in the size of the MEPs which can then be attributed to an effect of those other stimuli on motor processes.

In this experiment, participants read sentences describing transfer (e.g., "Tony gives you the pen") or no transfer (e.g., "Tony and you look at the pen"), and we measured MEPs in the *opponens pollicis* muscle that participates in thumb movements. If understanding a transfer sentence involves simulating action using the motor system (and those systems that control the thumb, in particular), then we should observe greater modulation of the MEPs for the transfer sentences than the no-transfer sentences. We observed this effect for sentences describing the transfer of concrete objects as well as sentences describing transfer of abstract information (e.g., "Tony delegates the responsibilities to you.").

Fast dynamics in the brain's language comprehension network

Marcel Bastiaansen
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During language comprehension, incoming sounds or orthographic patterns trigger a cascade of memory retrieval operations that make available the necessary ingredients for understanding the message. Once available, these different ingredients have to be integrated (unified) into a coherent interpretation of the utterance, both at the sentence and at the discourse levels. Thus, two different cognitive processes, namely memory retrieval operations and unification operations, play a crucial role during language comprehension (cf Hagoort, 2005).

PET and fMRI studies have revealed that a large number of widely distributed brain areas is involved in language comprehension. However, due to their poor temporal resolution such studies provide a rather static picture of the brain's language network, mainly revealing the structure of this network. We are therefore investigating, in an increasing number of studies, whether the patterns of synchronization and desynchronization of EEG and MEG activity can capture the fast dynamics of the brain's language network. Event-related changes in EEG/MEG power and coherence are thought to capture changes in local and long-range neuronal interactions, respectively, and thus provide the necessary tools to study the dynamics of functional network formation in the brain (Bastiaansen & Hagoort, 2006).
Power and coherence changes in the EEG or MEG during language comprehension tasks have been observed in three different frequency bands: theta (4-7 Hz), lower beta (13-18 Hz) and gamma (above 30 Hz). The effects can roughly be subdivided into effects related to mnemonic aspects of language comprehension, which appear to be most prominent in the theta frequency range, and effects related to unification (mostly apparent in the beta and gamma ranges). In the symposium I will address the above issues, and give a brief overview of the available data.

Symposium: Reading (and Listening) to Learn about the Physical Sciences: A Developmental Perspective

Organiser: Nancy L. Stein
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Learning with conversational agents: Tracking, training, and talking about Physics principles and misconceptions

Arthur Graesser and Barry Gholson[1]
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When children and college students read a textbook on science, most of them can learn shallow knowledge, such as definitions of key terms, lists of objects and their properties, isolated facts, and other ideas that are easy to capture in the explicit text. However, available evidence has revealed that they acquire little or no knowledge at deeper levels when they read textbooks on physics, computer literacy, and other technical topics (Graesser, Lu et al., 2004; VanLehn, Graesser et al., in press). Deep knowledge consists of causal explanations, complex plans, logical justifications, and other forms of knowledge that require reasoning, inferences, and links to multiple information sources. Deep knowledge is needed to prevent or rectify persistent misconceptions about science that are often created when people perceive and act in their everyday worlds. Textbooks are not the right media for acquiring deep knowledge so the texts need to be accompanied by more advanced learning environments that challenge learners' illusions of comprehension, expose their misconceptions, and afford deeper levels of mastery.

This presentation discusses how an advanced learning environment (AutoTutor) attempts to scaffold deeper knowledge of Newtonian physics. One way is to present difficult physics questions (problems) and hold a conversation with the learner in natural language while answering the questions (solving the problems). Animated conversational agents guide the learner in these interactions. The underlying notion is that *conversational interactivity* will create deeper learning. A second way is to have interactive microworld environments that allow the learner to manipulate parameters (e.g., mass and speed of moving objects) and observe the simulated results. The underlying notion is that *perceptual-motor interactivity* will create deeper learning. Tests of these learning environments with AutoTutor have targeted adolescents (grades 8 through 11) and college students who learn about topics in science and technology. Fine-grain assessments have tracked the mastery and application of particular principles (e.g., net force equals mass times acceleration) and also the misconceptions (e.g., the impetus fallacy) throughout the history of pretest, training, and posttest. The results of over a dozen experiments have uncovered three factors in these interactions that best explain learning gains: the quality of the content the student receives within a given time window, the number of deep-level questions the students experience within a time window, and the amount of prior knowledge on the topic.

Meaningful learning in science with reading comprehension and writing

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Science IDEAS is an instructional model designed to accelerate student achievement in science, reading comprehension and writing. Researched and developed during the last two decades this knowledge-based comprehension model integrates science learning with reading comprehension and writing in a daily two-hour time block. Students in grades 3-5 are engaged in a variety of inquiry-based hands-on, reading comprehension, writing and concept mapping activities to build students' conceptual understanding of core science concepts while improving their ability to read challenging content area texts. Students in grades 6-8 and Post Secondary classes participate in a modified Science IDEAS model in their content-focused science courses.

The findings show that the coherence structuring of the content through concept mapping leads to an accurate understanding of the content area. Further, the concept mapping can be done through visual graphing of the ideas as well as by reading about the ideas. The visual graphing helps students who normally struggle with reading and vocabulary comprehension to understand the ideas at a conceptual level without first burdening the students with reading about the concepts before they fully understand them. Students who were slow readers all improved not only on their science understanding but also on

their general reading comprehension and vocabulary scores. These data underscore the significance of increasing conceptual understanding to increase general comprehension abilities.

Making the invisible visible: The conditions for the early learning of Physics

Nancy L. Stein, Marc Hernandez, and Perla Gamez[1]
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Are elementary school children capable of learning underlying fundamental concepts related to physical state changes and thermodynamics? If so, what factors facilitate learning? What are the obstacles, and how can they be overcome? Can the principles that enhance learning about physical state changes be generalized to other domains of physics and science? If we succeed, how is our instruction different from the everyday instruction that the majority of children receive in science? We taught fourth-grade students about state changes of water and the mechanisms that lead to the change from one state of water to another. We wanted children to understand the definition of matter, the molecular basis of matter, changes that occur in the speed and movements of molecules as water changes from one state to another, the definition and importance of heat energy in regulating the speed and movement of molecules, the idea of temperature as a measure of heat energy, the points at which water freezes and boils, the processes that go on as water freezes and boils, and the changes or lack of changes in the shape and volume of water in its solid, liquid, and gas form.

Several conclusions can be drawn from our studies. First, the conceptual content, organization, and explicitness of ideas about physical state changes are the most important dimensions that regulate whether children understand critical aspects of physical state changes. Second, the core concepts related to many aspects of states changes are NOT to be found in most science texts for elementary school children. Of the 32 concepts in our modules, at the most, 10 to 15 are found in different textbooks for elementary or junior high students. Third, when fourth and fifth grade teachers do teach these concepts, they devote at the most two days to instruction. Our four modules were taught over a ten-week period of time, encompassing seven 40 minute teaching sessions, a pre-test, post-test, and four different assessments. Fifth, the explicit and concrete nature of the causal sequence underlying physical state changes is readily accessible with the use of both static and dynamic graphics, where the graphics simulate the actual changes that occur during water state changes. Six, the individual feedback that was given to some children and not to others was one of the most critical variables in the study. Those children who received individual feedback not only did well initially, but also maintained their understanding months later.

Children had little difficulty learning about changes in the speed and movement of molecules. They also learned about the distinguishing characteristics of each state of water. The concepts that presented difficulty were the core concepts of volume and area, which can be mastered in the second and third grade. Children also experienced difficulty with measurement concepts related to the Celsius Scale and units of measurement. Again, the content, its structure, and organization of the modules related to teaching concepts such as volume and area are the source of difficulty, not the students and not their age. Our recommendations are that children can learn these concepts at much younger ages, but the conceptual content of the instructional modules needs significant change, as does the amount of time spent on each task. Further, the lack of coherence and explanation in almost all of the existing science texts is a major obstacle to learning.

Designing for understanding: The impact of tasks and individual differences on learning science from the Web

Jennifer Wiley[1], Christopher A. Sanchez[2] and Thomas D. Griffin[1]
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The use of the web as an educational resource has quickly become ubiquitous. However, reading text

online encourages skimming and superficial reading behaviors perhaps even more so than reading from printed sources. On the other hand, illustrations and animations can be easily included in texts that may aid comprehension under particular circumstances. The potential to harness the affordances of electronic resources for educational use requires the careful examination of how texts should be presented so that students actually gain understanding of the phenomena they are researching. All studies in this line of research use texts that contain a causal structure of scientific phenomena, and test for understanding of the causal or situation model that is acquired through reading. Both the texts and the learning outcomes are based on this causal analysis, which is used to operationalize "comprehension" and not more superficial learning about the topic (such as surface memory for ideas that were presented). This talk will detail a series of studies using this causal paradigm that have explored the complex interaction of task manipulations designed to encourage deeper learning of science content during internet inquiry tasks with individual differences in working memory and spatial ability.

The topics that have been explored are mainly earth science (what causes volcanic eruptions, what causes ice ages). The first investigation I will detail has found that including illustrations is not always beneficial, and can sometimes hinder the learning of low working memory capacity readers as they are distracted by the images (Sanchez & Wiley, 2006). This is the case mostly when the images are irrelevant for learning however. A slight benefit was found for static relevant images. In another study, where all images were relevant, comprehension only improved significantly for animations over plain text. Although a slight benefit was found again for static images (especially among students with high static spatial ability), a significant benefit was found for animations on comprehension of why volcanoes erupted (a subject matter that requires understanding of invisible dynamic changes). Further, individual differences in dynamic spatial ability were significantly related to the ability to learn from plain text or static images (as students had to visualize and animate the movement of plates and lava in their heads), whereas performance overall improved and showed no relation with dynamic spatial ability in the animation condition (Sanchez & Wiley, in preparation).

From another tack, we have also been investigating which types of learning tasks improve comprehension of science text, and have found that engaging in argumentation and self-explanation tasks while learning from multiple relevant sources (Wiley, 2001, in preparation) helps to improve comprehension. Further, our studies suggest that one way that these tasks help students learn is by improving students' ability to monitor their own comprehension of science text (Griffin, Wiley & Thiede, 2007). The strength of all of these studies is the ability to operationalize the situation model in our texts and learning outcomes, which allows us to determine which conditions cause readers to direct their attention to the right level of comprehension, and when they tend to create a coherent causal model of scientific phenomena which allows them to better understand the phenomena and avoid misconceptions.

Symposium: Assessing Non-cognitive Constructs through Constructed Response

Organisers: Matthew Ventura & Richard Roberts[1]
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Noncognitive constructs: Theory, measures, and applications in Education

Richard D. Roberts[1], Jennifer Minsky[1], Carolyn MacCann[1] & Ralf Schulze[2]
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Scientific and popular interest in noncognitive testing as an alternative or adjunct to intelligence and achievement testing has grown enormously over the past decade for a variety of reasons. These include their potential to reduce adverse impact, the increasingly sophisticated and high-fidelity methods of testing that technology allows, and a realization that constructs such as happiness constitute meaningful criteria. The potential use of such assessments is diverse and includes selection, counseling, outcome assessment at the school level, and feedback to the student to enhance self-insight, to name just a few. Given increasing interest in the possibility of noncognitive testing in education, opening a dialog on the promises, practice, and potential pitfalls of noncognitive testing seems timely.

In this presentation, we discuss a variety of noncognitive constructs (e.g., time management, test anxiety, persistence, and personality) that we have examined in a series of four studies (N = 3,000), spanning a variety of different educational settings (i.e., school, community college, and university). Notably, the methods to assess the noncognitive constructs are rather disparate. They extend beyond self-reports to include situational judgment tests (sets of descriptions of real-world problems; the examinee is asked "what is the best way to handle this problem?"). Validity evidence supporting the use of these noncognitive measures is also presented, especially information on the extent to which they predict valued educational outcomes (e.g., grades, student engagement, and persistence). There is still much to be done with improving measurement processes, addressing the problem of faking, and documenting validity evidence for these noncognitive constructs. The presentation concludes with a discussion as to how research on discourse processing and text analysis might contribute to this end.

Deception and language use in the context of noncognitive assessments

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One of the primary difficulties facing standard assessment of noncognitive assessment is the problem of faking, in which participants can easily identify and select optimal responses (e.g., work well with others, dependability, etc.). One potential method for detecting faking in noncognitive assessment is to draw on recent research in examining the verbal characteristics of deception. A number of linguistic features have been observed to vary across deceptive and truthful messages, including decreased first person singular and increased third person, less immediate forms of speech, more negation and changes in the production of emotion terms. An important attribute of these types of linguistic features is that many of them can be automatically identified with the use of relatively simple natural language processing tools. This talk will review the deception literature and assess the feasibility of identifying faking in standard assessments of noncognitive skills given that some language features suggest deception, and that these features can be automatically detected.

Text analysis techniques and identifying author personality in computer-mediated communication

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To what extent do the wording and syntactic forms of people's writing reflect their personalities? How can these be assessed using text analysis? Previous explorations of author language have generally used top-down techniques focusing upon the analysis of content. In this talk I will describe novel work using bottom-up stratified corpus comparison which has been successfully applied to e-mail and blog varieties of computer-mediated communication. Here I examine a corpus of e-mail messages elicited from individuals of known personality, measured using Eysenck's EPQ-R. Using a bottom-up technique, it is possible to isolate linguistic features associated with different personality types, via both word and part-of-speech n-gram analysis. This approach is used to investigate the extent to which: Extraversion is associated with linguistic features involving positivity, sociability, complexity and implicitness; and Neuroticism with negativity, self-concern, emphasis, and implicitness.

Numerous interesting features are uncovered. For instance, higher levels of Extraversion involve a preference for adjectives, while lower levels of Neuroticism involve a preference for adverbs.

However, neither positivity nor negativity is as prominent as expected, and there is little evidence for implicitness.

In addition to personality, I will also discuss other potential applications of data-driven techniques to other traits and behaviours, for example, to the study of deception and social desirability, comparing top-down and bottom-up techniques. Finally, I discuss the promising application of different text analysis techniques to the classification of author personality.

Inferring emotions in tutorial dialogue

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AutoTutor is an animated conversational agent that simulates a human tutor by holding a conversation with the learner in natural language. AutoTutor holds a mixed initiative dialogue by asking and answering questions, giving hints, filling in missing pieces of information, and correcting misconceptions. Some versions of AutoTutor have speech recognition, whereas others have keyboard entry. We are currently designing a version of AutoTutor that attempts to infer the affective states of the learner on the basis of the dialogue history, facial expressions, body posture, and speech intonation. We have completed 3 experiments on college students that associate features of these 4 channels with the following 6 affective states that are most prevalent during learning: confusion, frustration, boredom, flow/engagement, delight, and surprise. We have developed algorithms that automatically detect these emotions on the basis of single channels and combinations of channels. The next step is to develop and test models of tutoring that intelligently respond to these affective states of the learner.

Item development and scoring of non-cognitive constructs using constructed response

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One common item type in noncognitive assessment is the situational judgment task (SJT). In this task a test-taker reads a short passage describing a critical incident, and then must answer questions about how to respond to that incident. This type of item typically requires test-takers select the best response, or rate the efficacy of a series of responses. We propose using a constructed response format as an alternative to these methods in developing an SJT assessing socio-emotional competency. Below is an example of an item:

John (P1) and his best friend Tom (P2) are both in the same line of work. There is a prize given annually for the best performance of the year. The two of them both worked hard for the prize. One night the winner is announced: it is Tom.

We are developing an SJT where test-takers would respond to three prompts for each situational story: (1) What emotions are being elicited by each protagonist? (2) What are the causes or conditions that lead to these emotions? (3) What coping strategies can be adopted if the emotions are negative? Successful completion of these questions requires a range of inferences about what emotions are elicited by the situation.

The purpose of this presentation is to discuss the various ways to construct items at various levels of difficulty, with difficulty being defined by four criteria: (1) The number of possible emotions elicited by both protagonists in the situation (P1: frustration, anger; P2: happiness, guilt); (2) The number of theoretically similar emotions possibly elicited by a situation (e.g., shame, anger, frustration, jealousy); (3) The number of casual antecedent and enablement inferences required to elicit a particular emotion (e.g., friend won prize instead of me; I worked hard but did not win the prize); and (4) The number of plausible predictive inferences necessary to cope with the emotion (e.g., be happy for my friend since he worked hard for the prize also). We will review examples of how to develop items under these criteria as well as discuss automated methods of scoring constructed responses.

Society for Text and Discourse
Seventeenth Annual Meeting
University of Glasgow, Scotland
July 8th to July 11th 2007

ABSTRACTS FOR SPOKEN PAPERS

(Alphabetical by first author)

(see separate sections for plenaries and symposia)

An analysis of the quality of AutoTutor's student modeling algorithms

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Intelligent tutoring systems can only provide proper pedagogy when their student models accurately ascertain student knowledge. I tested the student model in the current version of AutoTutor, which combines both Latent Semantic Analysis and a form of Content Word Overlap, using a set of expert-rated student answers to physics questions and their ideal answers. Preliminary results indicate that the combination of both algorithms correlates with expert ratings equivalently to LSA alone, but better than CWO alone.

Dialogue capability and perceptual realism in survey interviewing agents

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Standardized survey interviews produce important data but the constrained interaction may hurt data quality. We have previously shown that allowing interviewers and web survey interfaces to ground question meaning can substantially improve respondents' comprehension and thus response accuracy. We are now investigating the impact of animated interviewing agents (avatars) on respondents' comprehension of questions. We present a taxonomy of agent characteristics and behaviors that might affect comprehension and preliminary results from two interviewing agent experiments.

How pictures improve cohesion in narrative text written for young children

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Two studies examined how pictures in children's storybooks increase text cohesion. Study 1 compared pre-service teachers' comprehension of two versions of picture storybooks, (text + pictures) and (text-only). Number of correct responses to inserted questions was significantly lower in the text-only condition. Study 2 compared Coh-Metrix indices of the text-only and text + picture versions that were revised to include written descriptions of picture information. Cohesion for referential and semantic information was higher for the repaired versions.

Counterfactual meaning could be embodied. Evidence from action sentence compatibility effect

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Factual or counterfactual sentence with a transfer verb (e.g., lent) were presented auditorily except the verb that was presented visually. After a variable SOA, the verb apparently moved away or towards the participant, and he/she had to move the index finger in the same direction to press a key. For both counterfactual and factual sentences key pressing was faster for the mismatching conditions (e.g., transfer towards / finger away), than the matching conditions (e.g., transfer away / finger away). However, with a simpler version of the sentences the response pattern reversed. The two action-sentence compatibility effects suggest that the comprehension of counterfactuals involves motor activation that either interferes with or facilitates a concurrent visual-motor task.

What makes a text more or less difficult? Using Coh-Metrix to identify text difficulty

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We evaluated the effectiveness of new indices of text comprehension in measuring relative text difficulty. Specifically, we examined the efficacy of automated indices produced by the web-based computational tool Coh-Metrix. In an analysis of 60 instructional science texts, we divided texts into groups that were considered to be more or less difficult to comprehend. The defining criteria were based on Coh-Metrix indices that measure independent factors underlying text coherence: *referential overlap* and *vocabulary accessibility*. In order to validate the text difficulty groups, participants read and recalled two "difficult" and two "easy" texts that were similar in topic and length. Easier texts facilitated faster reading times and better recall compared to difficult texts.

Counterfactual context effects: From eye-movements to Neuroscience

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Theorists suggest that comprehending counterfactual information requires readers to use mental spaces to represent both reality and the hypothetical alternative. In a series of studies, using techniques ranging from eye-movements to neuroscience, we have investigated the extent to which real-world knowledge and prior context compete to influence discourse comprehension. Results suggest that counterfactual contexts are rapidly integrated into the current discourse; however, real-world knowledge initiates early interference.

When is cataphoric reference recognized?

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Gordon & Hendrick (1997) argued that when cataphors appear in a preposed adjunct phrase (e.g., Before he left work, John…), since they cannot be resolved until the main clause, incremental interpretation is suspended, and no antecedent immediately sought. We report eye-tracking data showing that readers experienced difficulty when pronouns had no prior antecedent, whether or not the

pronoun appeared in a preposed adjunct phrase, suggesting that incremental interpretation is not suspended in these cases.

Using cataphoric reference to test the automaticity of gender stereotype inferences

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Readers immediately slow down when an anaphor (e.g. *herself*) refers to a mismatching stereotypical gender noun (*minister*). This was attributed to a clash between the gender of the pronoun and the gender automatically inferred from the noun. The results from two experiments contrasting gender inferences in anaphora and cataphora indicate that in cataphora, where gender is specified by prior discourse, stereotypical gender inferences can be coerced. The automaticity of such inferences is discussed in view of the findings.

Computational modeling of reference in the presence of shared visual information

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A number of recent studies have demonstrated that groups benefit considerably from access to shared visual information. This is due, in part, to the communicative efficiencies provided by the shared visual context. However, a large gap exists between our current theoretical understanding and our existing computational models. In this work, we address this gap by developing a computational model of discourse and referential communication that integrates linguistic cues with visual cues in a way that effectively models reference during tightly-coupled, task-oriented interactions. The results demonstrate that an integrated model significantly outperforms existing language-only and visual-only models. This work can be used in applications to inform and augment the development of conversational agents, applications that dynamically track discourse and collaborative interactions, and dialogue managers for natural language interfaces. In addition, it serves as a potential framework for modeling theoretical questions such as how multimodal partner-modeling takes place.

Lexical content of self-deceptive speech

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Clinicians reliably (if controversially) judge speakers as self-deceiving. What makes speech self deceptive? Using a dictionary-based tool (Pennebaker's LIWC), we analyzed lexical content in 79 audio-recorded interviews scored with the Defensive Verbal Behavior Assessment (Feldman Barrett, Williams & Fong, 2002). Speech rated as self deceptive used more words, more cognitive mechanism words, and fewer unique words. The profile differs from that of deceptive speech, and points toward better specified (perhaps even automated) diagnostic criteria.

The activation and long-term memory of the predictive inferences: The impact of reading strategy and distractive causal elaboration

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This study focuses on the impact of text-property (Distractive Causal Elaboration) and reading goals (read-to-understand/read-to-predict) on the online-activation and long-term memory of the predictive inferences in reading narratives. Eighty college students were randomly assigned to read-to-understand or read-to-predict. Results suggest compared to read-to-understand, read-to-predict produces quicker probe-naming (<500ms) and more stable instantiation of the target inferential concept in the cued recall at no cost to the explicit text which is causal-but-distractive to the target concept.

Let's just not talk about this

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In a variant of the Map Task, – an unscripted route-communication task -, difficulty of description, difficulty of assessing common ground, and salience were varied to determine their effects on the structure of expressions referring to route-critical landmarks which differed between interlocutors' maps. When the difficulty of description increased, players mentioned fewer landmarks, and less often brought out the mismatch between the maps. No predicted effects of common ground assessment or salience were found.

Gricean Potentials: How the brain reacts to violations of the Maxim of Quantity

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In an experiment, we investigated by means of ERP-registration (Event Related brain Potentials) how language users react to pragmatic violations. Participants were presented with question-answer pairs in which the Gricean Maxim of Quantity was violated. The violation elicited a very early bipolar ERP-component. Additional effects were found, reflecting extensive thematic and syntactic reanalysis. We conclude that pragmatic processing is not some peripheral phenomenon, but lies at the heart of the language processing system.

Task and strategic processing in L2 text comprehension

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This research compared text processing and memory of L2 readers who were told to read an expository text for expression, for image, and for critique. Think-aloud responses were analyzed for modes of processing (e.g., emphasis on word analysis vs. conceptualization of the content of the text vs. reaction and evaluation of the text) (Experiment 1). Task effect on recall was also analyzed by considering the effect of L2 proficiency and general comprehension skill (Experiment 2).

On-line processing of written irony

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Forty participants read statements in ironic and literal contexts while their eye movements were recorded and after reading responded to comprehension questions. The results showed that first-pass rereading times were longer in ironic than literal contexts and that ironic statements were more difficult to comprehend. However, some participants (30%) demonstrated good comprehension of irony. Good irony comprehenders showed an effect of irony in first-pass progressive reading times whereas low irony comprehenders showed only delayed effects.

The drawer is not yet open: Action-compatibility effects with sentences that do not describe a movement but a state

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In 2002 Glenberg and Kaschak reported the Action-Compatibitlity Effect (ACE): Participants were significantly faster in judging the sensibility of sentences such as "He closed/opened a drawer" in cases where the movement that was required for a correct response matched compared to mismatched the movement that was described in the sentence. In the present research we asked whether an ACE would also be observed with sentences that do not describe a movement but a state. We presented participants with sentences such as "The drawer is still open / not yet open". These sentences describe a state but the temporal particles "still" and "yet" imply a future movement. In line with the hypothesis that comprehenders mentally simulate this implied future movement, we observed significant ACE effects for affirmative and negative sentences describing states. Reverse ACE effects were observed when the sentences instead of an adjective (e.g., "open") contained and adjectival passive (e.g.,"opened"). This suggests that comprehenders in cases of an adjectival passive, instead of simulating the implied future movement (i.e., closing for an affirmative sentence with "opened"), simulate the movement that is explicitly mentioned in the sentence (i.e., the past movement that brought about the current state: opening).

Hearing voices in your head: Activating representations of character voice across modalities

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This experiment investigated whether participants activate a representation of the voice of story characters during silent reading. Participants listened to (Phase 1) and read (Phase 2) scripts from a radio show. While reading, participants performed a word recognition task to probes spoken in a voice that either matched or mismatched the voice of the currently speaking character in the text. Recognition times were faster and more accurate to matching than mismatching probes, suggesting that character voice might be invoked during text processing.

Using the Landscape Model to predict argument recall

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A key element to argument comprehension is recognition and representation of argument elements. Prior research has shown that most students do not detect these elements when reading a text with argument and narrative elements. This research is designed to detect readers' memory for argument texts and blended argument and narrative texts. We used the Landscape Model to predict recall of readers of differing argument and reading abilities.

The role of causal inferences in the maintenance of goal-related information during narrative comprehension

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In two experiments, participants read unfinished stories with goals that were satisfied or unsatisfied. Experiment 1 utilized a conclusion-writing task that revealed increased activation of unsatisfied goals and the development of causal inferences. Experiment 2 utilized a probe-word recognition task that indicated increased activation of unsatisfied goals only following the introduction of causally-relevant cues. Overall, this study supports an interaction between active and passive processing both during and following initial comprehension.

Individual differences in the recollection and familiarity of text ideas

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The goal of this study was to investigate individual differences in recollection and familiarity of text ideas. Participants received a battery of cognitive tests. They then read a set of texts and made Remember/Familiar judgments on a subsequent recognition test. Domain knowledge was associated with recollection of both true and false items. Individuals who were high in domain knowledge made few false alarms; however, their memory errors were accompanied by subjective reports of vivid remembering.

Discourse processing through speech, eyes, face, and hands

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Research in discourse processing has primarily focused on reading, while multimodal face-to-face settings include perhaps the most basic forms of communication. Relatively few studies have investigated how various communicative modalities are aligned in these settings. As part of a larger project, the current paper investigates how discourse structure, speech features, eye gaze, and facial

expressions interrelate in a map coordination task. The study sheds light on multimodal communication in humans and embodied conversational agents.

The force behind language: Are concrete and abstract sentences understood in terms of underlying force patterns?

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Talmy's (1988) theory of force dynamics explains how sentences describing concrete and abstract events are represented in terms of their underlying patterns of forces. Experiment 1 demonstrated that abstract sentences are primed by sentences of the same force pattern. Experiment 2 showed that short animations of the same force pattern primed both abstract and concrete sentences. The idea that sentences are represented in terms of their underlying force patterns is consistent with an embodied framework of language comprehension.

Agency and attitude in temporal language

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When describing the passage of time, people assign symbolic agency to themselves (e.g., we're approaching spring break) or to an event (spring break is approaching). When do they assign agency one way or the other, and why? We explored the influence of attitudes on people's temporal agency assignments. Our findings indicate that people prefer to assign agency to themselves when describing a desirable event and to the event itself when describing an undesirable one.

Causality in cognition and discourse processing

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Discourse comprehension is a process by which a coherent representation of the information in the discourse is constructed, and causality plays an important role in this representation. The aim of this paper is to show that the search for causally motivated coherence is a property of human cognition. This will be demonstrated on the basis of research in such diverse domains as visual perception, attribution theory and statistical reasoning.

Pedagogical and motivational dialogue moves used by expert tutors

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Decades of research on human tutoring have elucidated our understanding of the tutoring process. The majority of these studies; however, have primarily focused on untrained or "typical" tutors and have provided little insight into the strategies used by expert human tutors. The research presented here is an in-depth analysis of the motivational and pedagogical dialogue moves that expert tutors used when interacting with students during forty one-hour tutoring sessions.

How overview processing strategies affect comprehension in hypertext

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Despite the claims for its relevance, there is no agreement on how hypertext overviews impact comprehension. The hypothesis that overviews affect comprehension depending on how they are processed was explored. Results from two eye-tracking studies revealed that overview processing strategies differ by reader's prior knowledge. In addition, for low knowledge readers a positive relation was found between duration of first-pass fixations on the overview at the first sections read and text comprehension.

Shallow processing of ambiguous pronouns: Evidence of delay

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Two reading time experiments examine how ambiguous pronouns are interpreted under shallow processing. We outline three possible models of ambiguous pronoun resolution. Two involve an initial commitment followed by possible revision, and the other involves a delay in interpretation. Our experiments provide evidence supporting a delayed model of ambiguous pronoun resolution under shallow processing. We find no support of a processing system that makes an initial interpretation of the pronoun when it is first encountered.

Narrative perspective: Which view should we adopt?

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Discourse research strongly supports the premise that narrative readers construct situation models of the story world. One interpretation of situation model construction suggests that readers create a level of virtual presence in the story world. In two exploratory experiments, we examined the potential that perspective may be influenced by story-character focus (i.e., taking the perspective of the main character) or a more general world focus (i.e., putting oneself in the story as a third-person observer).

Counterfactuals in the brain. An ERP Study

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Participants were given short stories describing an initial situation, followed by a factual or a counterfactual event. Then a critical sentence reinstated the initial situation (consistent with the counterfactual version) or described a consequence of the event (consistent with the factual version). The ERP time-locked to the critical sentence last word showed a larger N400 following counterfactuals. However, consistence effects were only observed in factual sentences, suggesting that in counterfactuals two meanings (one factual and the other counterfactual) are momentarily available.

Comprehension of contrasting conceptual agreements

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Previous research shows that speakers use information about conceptual pacts in common ground when creating utterances. Speakers use these pacts when they make use of lexical entrainment in reference choice and when they contrast pacts when creating new pacts. Using a referential communication task, two experiments lend support to the hypothesis that addressees use similar information about conceptual pacts in common ground when interpreting utterances.

Discourse, syntax, and prosody: The brain reveals an immediate interaction

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Speech is structured into parts by syntactic and prosodic breaks. The detection of a syntactic break necessarily follows detection of a corresponding prosodic break. However, by embedding sentences in a discourse context one can induce the expectation of either the presence or the absence of a syntactic break right at a prosodic break. Event-Related Potentials (ERPs) to acoustically identical sentences in these two contexts revealed that the Closure Positive Shift (CPS), an ERP component known to occur after prosodic breaks, was reduced in size. The results establish that the brain matches prosodic information against syntactic information immediately.

Storytelling ability in 4- to 9-year-old children: Correlates with parent contributions during reminiscence

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Children develop linguistic and narrative skills within parent-child reminiscence conversations. The present research examines the kinds of information and questions parents provide in these conversations and whether the parents' provisions are associated with the content and overall quality of independent story productions given by children 4.5 – 9 years old. The results revealed that for the younger but not the older children, parents' use of causal and descriptive language is associated with the quality of the children's stories and the narrative devices they use.

Processing and memory of information presented in narrative or expository texts

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We used a think aloud procedure to examine processing and memory of to-be-learned information embedded in narrative or expository texts. Ten sentences were identical across texts. For the expository text, content memory was greater overall, while paraphrases and connections to prior text content predicted memory. For the narrative text, elaborations and the number of references to the story

protagonist predicted memory. Results suggest that text genre influences strategic processing during reading to learn.

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POSTER SESSIONS

(By session, then alphabetical by first author)

***Note to poster presenters* –**
Please note your session number and the identifying number next to your title. The title identifying number will be the number on your poster board

POSTER SESSION 1

1 - Effects of computer mediation on collaborative design tasks

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The study examined collaboration on shared design tasks by less- and more experienced engineering design students, to ascertain whether discourse is affected by computer mediation. Face-to-face and remote conditions were compared. Differences in communication due to expertise and media occurred, including higher rates of interruptions in CSCW dialogues, and more frequent use of gesture by less experienced students. Analysis of subjective ratings of various aspects of communication indicated that participants were unaware of these effects.

2 - Updating news articles: The role of the certainty of causal information

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The purpose of this study was to determine whether readers update causal information when new causes supersede prior causes. We manipulated the certainty of causal information provided earlier in the text. We expected that the level of comprehension difficulty readers experience when encountering new causal information would be function of the certainty of the cause initially mentioned. Our data confirmed that readers spontaneously engage in the updating of their representation since global inconsistencies were detected.

3 - Cultural differences in inferences made during reading

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A recent proposal states that cultural differences in cognitive style exist between East Asian and Western populations (Nisbett & colleagues). We tested this hypothesis by measuring the inferences that Eastern and Western subjects made while reading short texts. The texts permitted logical, trait, or situational inferences. The results partially support the Systems of Thought hypothesis in that East Asian subjects drew all three types of inferences, while Western subjects drew only logical and trait inferences.

4 - Contextual cues and anaphoric complexity during inferential processing

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Inferential processing involves accessing an anchor in discourse *and* creating a new information unit. Which factors influence these processes? Two ERP experiments and rating studies investigated the role of definiteness and the anchor's degree of activation. Results suggest that access of contextual information – semantic, pragmatic, structural – occurs initially and is unaffected by manipulations of definiteness and semantic activation. Subsequent anaphoric complexity (establishing new representations) is modulated by definiteness marking and fine-grained semantic distinctions.

5 - Uncertainty raises the cognitive interest of readers: the case of hypothetical predictions

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The cognitive interest of narrative readers was shown to increase when they infer uncertain predictions, but not when they infer deductions. Thus, the cognitive interest is first caused by uncertainty about information required to comprehend. It would act as a prior signal enhancing attention and inferences in the hope of reducing uncertainty through information processing. These data and others that show the readers' interest for contradictory statements in narrative, support a theory of cognitive interest (Campion, Martins & Whilhem, to appear in *Discourse Processes*). Accordingly, cognitive interest does not rely on the postdictability of what is read. As a motivation to suppress uncertainty, cognitive interest would selectively enhance attention and inferences, with the pleasurable aim of resolving issues.

6 - Capturing students' reading strategies when working with multiple documents

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We studied reader's strategies when working with multiple sources using a Think-aloud Methodology. Twenty-three university students read three texts and answered one general or several specific questions on the texts. Verbal data was recorded and analyzed. We analyzed verbalizations depending on the type of task and level of learning acquired on a final learning measure. Results indicated that answering a global question made the students verbalize more on relevant information to understand it better and that poor learners were mainly focused on superficial aspects of the task, apparent in a greater number of verbalizations on the management of the task and on searching.

7 - Reading and being mature empower inquiry

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Questioning has its pivotal position in exploring knowledge. The competency to ask question is mediated by several factors. In this study, we analyze 2nd, 4th, and 6th graders questioning of graphics. Children's grade, daily reading time, prior knowledge, graphic comprehension are collected to investigate their relationship with numbers of questions they generated after viewing graphics of a snail and a toaster. The results show children's grade and daily reading time are crucial for children's questioning.

8 - Effects of signalling formats and positions on fourth-grade students' reading

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Signals emphasize a content of the text or structure without adding extra information. We examined the effect of the signaling formats (picture-based or word-based) and positions (in the beginning or later place) on fourth-grade students' reading comprehension. Our results revealed that adding picture-based signals more efficient than word-based signals or nonsignals in students' reading comprehension, free recall and reading time. Moreover, posing signals in the beginning better than at the later place of a text.

9 - Bridging in intensional contexts

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Verbs such as *want* and *seek* belong to a category known as Intensional Transitive Verbs (ITVs). Their intensional characteristics have been exploited in the examination of processes underlying bridging inferences. We used an eye-tracking paradigm to examine comprehension of ITVs and their interaction with bridging inferences for native Italian and English speakers. Results indicate that ITVs constructions are processed in a different way from the extentional ones.

10 - Psychological correlates of subjective time experience: Narrative psychological content analysis of short autobiographical recalls

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The aspects of subjective time experience, such as point-fixed anchoring, sequential advance, start, duration, end, repetition, references to evertime, nevertime and uncertain time, time slowening and accelerating, etc. were classified into a word and expression searching tool, and their frequency of occurrence was identified in 83 short autobiographical texts collected from a normal sample. The psychological correlates of subjective time experience were determined in comparison with scores of the storytellers in various psychological tests.

11 - Children's understanding of tales: A developmental approach of the monitoring of the multiple situational dimensions

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The present study deals with the understanding of tales, which was explored with children of 6- to 7-year-olds. Our goal was to identify the nature of information children preferentially monitor to construct a mental representation from tales that were read to them. Our main results indicated that causal statements were more accurately represented compared to spatial, temporal and protagonist information. However, the monitoring of causal information was better achieved by older children.

12 - Associative memory: organization of the meaning

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Describing the content of associative networks is essential to understand the activated representations during reading. The analysis of associative responses allowed classifying this association under 5 categories: denotation (hyperonyms), reference, synonym and linguistic associations. The first experiment showed there is more denotation and referential associations. The second experiment shows that semantic priming is stronger for referential associations and even more for referential + linguistic associations. The integration of references into an associative network is discussed.

13 - Au-pairs are rarely male: Role names' gender stereotype information across three languages

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A list of role names for future use in research on gender stereotyping in language comprehension was created and evaluated. In two studies 126 role names were rated with reference to their gender stereotypicality by English, French and German speaking students of Universities in Switzerland (French and German) and in the UK (English). Role names were either presented in specific feminine and masculine forms (Study 1) or in the masculine form (Generic Masculine) only (Study 2). The rankings of the stereotypicality ratings were highly reliable across languages and questionnaire versions, but the overall male bias of the ratings was reduced if participants were also presented with the female versions of the role names, and if the latter were presented on the left side of the questionnaires.

14 - Personality and language structure in on-line and off-line communication

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Previous work has used the LIWC text analysis tool to derive language factors relating to personality. Here we investigate the linguistic factor structure in e-mail and weblogs, comparing these to findings for written language. Our findings broadly replicate results from off-line studies, although blogs can be

differentiated from non-CMC language; e-mail shares features with both genres. Incorporating personality information shows that patterns of language behaviour for Neuroticism and Agreeableness distinguish on-line from off-line environments.

15 - Accessibility of situation model dimensions

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The event indexing model (Zwaan, Langston, & Graesser, 1995) assumes readers build mental representations of discourse reflecting multiple dimensions including protagonist, time, space, cause, and goal. Prior research has been unable to assess more than one or two of these dimensions simultaneously. The goal of this study was to explore a methodology, akin to classic timed verification tests, that employs naturalistic text and enables the observation of information at all five situation model dimensions.

16 - Inferential questioning: Help primary-school children become active readers?

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Following a three-pronged method, two experiments tested the effectiveness of an inferential question answering procedure to improve knowledge-based inferences in narrative comprehension by third-grade children. Results showed that: (a) a question answering task supported and extended spontaneous inferential processes about causes, consequences and goals; and, (b) inferential questioning improved student's recall of main ideas targeted by questions, but interfered with recall of main ideas not targeted by questions inviting the inference.

17 - The immediate influence of gender stereotypes on reading

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We extend the work of Garnham et al. (2002) and examine the immediacy of the impact of gender stereotypes on reading. We report the results of a reading time study that shows a reading time penalty as soon as it is apparent that the gender and behaviour of a character mismatch. However, this congruency effect arises only when the characters are female. Our results indicate that some gender stereotypes have an immediate influence on reading.

18 - Generically intended, but specifically interpreted: When beauticians, musicians and mechanics are all men

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The influence of stereotype and grammatical information (masculine intended as generic) on the representation of gender in language was investigated using a sentence continuation evaluation paradigm. The first sentence introduced a role name (e. g. The spies...) and the second sentence contained explicit information about the gender of one of more of the characters (e. g. ...one of the

women...). The experiment was conducted in French, German and English. In contrast to English, stereotypicality of role names had no influence on readers' male biased representations in French and German, where interpretations were dominated by the masculinity of the masculine (allegedly) intended as generic.

19 - Comparison between perceptive units and semantic integration units of L2 readers: Focus on the effects of ergativity on sentence processing

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Gobet et al. (2001) classified chunking from the aspects of automaticity, *perceptual chunking* and *goal-oriented chunking*. This study aims to investigate perceptual chunking units and conscious semantic integration units of L2 readers, focusing on the ergativity of verbs and on L2 reading proficiency. The results showed that (a) ergativity affects semantic integration units, (b) L2 reading proficiency influences both perceptual and semantic integration units, and (c) the degree of understanding can cause diversity of chunking.

20 - Beyond quantifiers: Compset focusing without natural language quantifiers

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Compset focussing is a property of negative NLQs and it has been theorised that this is due to the negative NLQs ability to increase the shortfall between presupposed and stated amounts. The current experiment investigates the production of compset references by increasing the shortfall without use of an NLQ. Using positive and negative emotion words and character's high and low desires it is shown that compset focussing and shortfall manipulation can occur without NLQs.

21 - What role names tell about referent's gender

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Two eye-tracking studies assessed effects of grammatical and conceptual gender in generic role name processing in German. Testing masculine role names of male, female or neutral typicality showed that a mismatch between a role name's conceptual gender and a gender specifying anaphor (*foresters - these women*) significantly slowed down reading the determiner *these* and the spillover region following the anaphoric noun *men/women*. A mismatch between the antecedent's grammatical gender and the anaphor, in contrast, slowed down the reading of *men/women* itself. Testing grammatically gender-unmarked role names furthermore revealed a general male bias in participants' understanding, irrespective of grammatical or conceptual gender. The results suggest a differing time-course in the processing of conceptual and grammatical gender cues. They furthermore show that the effect of gender information is not limited to role names with a particular referent. Gender information can apparently be attached to role slots for non-referring entities such as groups in discourse models.

22 - Effects of contextual relevance on activation of predictive inferences

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Previous studies of predictive inferences have found that activation of inference concepts is a product of the supporting context and the current input. This study investigated whether inference activation is contingent upon the supporting context being currently relevant. Naming times to inference concepts were faster following an inference-evoking sentence than a baseline sentence in both relevant and irrelevant context conditions. These results provide strong support for a bottom-up view of inference activation during reading.

23 - Narrative psychology as science

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Scientific narrative psychology takes seriously the interrelations between language and human psychological processes, specifying them as relations between narrative and identity. This is what discriminates the scientific narrative psychological approach from earlier psychometric studies, which established correlations between language use and psychological states. (Pennebaker, Mehl and Niederhoffer, 2003) It assumes that studying narratives as vehicles of complex psychological contents leads to empirically based knowledge about human social adaptation. Individuals in their life stories, just like groups in their group histories, compose their significant life episodes. In this composition, which is meaning construction in itself, they express the ways in which they organize their relations to the social world, or construct their identity. If we accept that people construct themselves and their psychological reality by stories in many substantial respects, then we are justified in assuming that the organizational characters and experiential qualities of these stories will tell us about the potential behavioral adaptation and the coping capacities of the story tellers. Scientific narrative psychology has developed its methodology: the narrative psychological content analysis (NPCA). Instead of analyzing semantic or thematic content, NPCA focuses on compositional or structural narrative categories (perspective, temporal organization, evaluation), which can be mapped on discourse level by computer algorithms and can be related to psychological variables of identity construction.

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24 - Assessing the reliability of the reading strategy assessment tool

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The purpose of the study was to establish the test-retest reliability of the Reading Strategy Assessment Tool (R-SAT). R-SAT measures reading comprehension and strategies by posing questions to the user as the texts are read on a computer. Answers are assessed on the frequency of paraphrases, bridges, and elaborations by using word-based algorithms. Participants took two R-SAT forms one week apart. Highest reliability occurred for elaborations and paraphrasing, and the ability to answer specific questions about the text.

25 - Narrative perspective and the emotion regulation of a narrating person

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The presentation defines three formal variations of narrative perspective and presents the module developed for the automatic coding of these perspective forms in self-narratives. Subsequently, an empirical study regarding the relationships between the narrative perspective forms and trait features of regulating emotion is presented. In this study 83 participants recounted self-narratives about significant

life story events. The results reveal relationships between the using of perspective forms and the coherence and stability of emotion regulation.

26 - The effects of healthy ageing on logical subordination

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A variety of aspects of language comprehension are known to be adversely affected by the normal processes of adult ageing. Little is known about how focus effects and depth of processing may be modulated by adult aging. In a self-paced reading experiment, we investigated whether the effects of focus observed in the young hold in the elderly, or whether they are reduced or enhanced. Results suggest that focus cues are enhanced in healthy older adults.

27 - The effect of aging on the comprehension of unheralded pronouns

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An unheralded pronoun is distant from its referent. However, a sentence before the pronoun reactivates its referent via a resonance process. In a reading time experiment, young adults solved an unheralded pronoun without difficulty. Older subjects had slower reading times on the unheralded pronoun. They found its referent less frequently. By evaluating working memory capacity, we concluded that the slower reading times should be assigned to a reduction of the resonance process in elderly people.

28 - A cross-disciplinary tool for providing dynamic feedback on multiple document skills

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Improving students' writing by providing quality feedback tailored to their specific needs is important. Three experiments were conducted to examine the effectiveness of Sourcer's Apprentice Intelligent Feedback mechanism (SAIF) in automatically detecting and improving students' multiple-document reading skills. Experiments 1 and 2 demonstrated that SAIF adequately detects students' problems and provides effective feedback to improve essays in the domain of history. SAIF was modified for cross-disciplinary instruction and preliminary results show support its effectiveness.

29 - Using the Landscape Model to simulate processing and recall of lengthy expository text

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The Landscape Model of comprehension (van den Broek) was used to investigate varying assumptions about processing of extended expository text. The goal was to determine what processing assumptions embodied in the model would result in output that most closely matched college students' recall patterns of a text chapter of about 3000 words. An extremely minimalist set of assumptions provided a partial fit. Additional trials with less restrictive assumptions are under way.

30 - Predicting reading comprehension from narrative comprehension: A 5-year study

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We investigated predictors of reading comprehension in two cohorts of children biannually from ages 4-8 and 6-10. Structural Equation Modeling was used to explore the predictive power of two latent variables, language comprehension and basic language skills, to later reading comprehension. The models suggested an independent relation between these variables with each contributing to later reading comprehension. Language comprehension and basic language skills appear to develop independently until both are combined for later reading comprehension.

31 - When small problem solving groups are effective: What leads to successful interactions?

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In this study, triads demonstrated more effective cryptarithmetic problem solving than dyads and singletons and were also better able than dyads to take advantage of group heterogeneity in math skill. Discourse analyses revealed that the triads made more explicit reasoning and evaluation statements than dyads. The results suggest that some specific advantages of collaboration are more likely among triads than dyads, and that triads may be an optimal group size when critical evaluation and reasoning are required for a task.

POSTER SESSION 2

1 - Maintaining task continuity in high-reliability organizations: Transferring information and sharing experience in hospital shift-change briefing sessions

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Shift-change briefing sessions are meetings that allow members of successive shifts in organizations (e.g. medical teams) to transfer information. But they also may serve to informally elaborate on relevant events and create shared experience among members. We videotaped 15 consecutive shift-change briefing sessions in a hospital surgery unit. The participation structure of the sessions was analyzed. Results show that both transferring information and sharing experience occurred, but at different and specific moments during sessions.

2 - The role of source domain knowledge in learning From analogies in scientific texts

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The current experiment tests the effects of prior knowledge of the source domain of the analogy on learning from text that includes analogy. Learners with high or low source domain knowledge read analogy or control texts. An analysis of learners' conceptual models showed that learners with higher source domain knowledge who read the analogy text were least likely to display misconceptions. The results indicate that analogies may differentially impact learning as a function of source domain knowledge understandings.

3 - The effects of hedged statements in arguments

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Researchers have found that hedged arguments (probably, sort of) are viewed less positively than unhedged arguments. In contrast, hedges are common in academic writing. Two experiments examine whether readers distinguish these types of hedges. Participants read an argumentative text and rated the message. The text with appropriate academic hedges was rated as more persuasive and higher in quality than the text with colloquial hedges. These results suggest that all hedges are not powerless language.

4 - Does priming increase title awareness?

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The effect of priming for title awareness was investigated. Subjects were divided into two conditions: an experimental group in which they were asked to answer questions about titles and their functions, and a control group. Preliminary results indicate that subjects who did not receive the priming questionnaire actually recalled titles better than those that did.

5 - Content and continuity: Investigating the multidimensional nature of situation models.

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The event-indexing model assumes that readers build mental representations that index space, time, protagonist, causality, and goal. Many studies have focused on the extent to which readers monitor continuity along these critical dimensions. However, before readers can monitor for continuities across dimensions they have to extract the situation model information that is present. The goal of this study was to explore the extent to which readers monitor both situational content and continuities while reading naturalistic discourse.

6 - The effect of subtitles on film understanding

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The aim of this study was to assess the effect of the subtitles in film understanding. We compared three versions of a film sequence (i.e., dubbed, subtitled, and original versions). The memory for both the visual elements and the dialogues of the sequence was evaluated, but also the inferences that were generated. One of the most important results was that the more difficult to understand the film sequence was, the more the viewers generated inferences.

7 - How complex is readers' mental representation of the main character's emotional status? A study on readers' goals and emotion representation

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Gygax, Tapiero & Carruzzo (2007) attempted to provide an explanation for the nonspecificity of emotion inferences suggested by Gygax et al. (2003 & 2004). They mainly demonstrated that readers form a somehow shallow representation of the main character's emotional status. They showed that behavioral components of emotions (e.g., *clinch your fist*), as opposed to emotions per se (e.g., *angry*), were better markers of readers' mental representation of the main character's affective status. The main idea behind such a finding is that behavioral components (linked to emotion construct) may be more straightforward to incorporate in readers' mental representation. In this paper, we attempted to further this idea by showing that the complexity of the main character's emotion representation, i.e. whether readers incorporate emotions per se and not just behavioral components, depends on reader's goals. In the first part of the experiment reported here, participants had no specific instructions regarding the main protagonist's emotional status. In the second part of the experiment, participants were explicitly asked to concentrate on the main protagonist's emotional status. Results suggest that such a goal shift generated differences in regard to reading times of sentences containing either emotion terms or behavioral descriptions.

8 - The influence of context on the specificity of predictive inferences

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There has been some debate concerning the specificity with which predictive inferences are represented in memory. This study examined the relation between contextual support and inference specificity. Results suggest that with strong contextual support, activation of predictive inferences was captured by facilitation in response time to more than one lexical item; however, with increased contextual support activation was restricted to only one lexical item.

9 - Neuropsychological correlates of discourse production in schizophrenic patients

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86 Italian-speaking participants (30 Schizophrenic patients and 56 normal controls) matched for chronological age and level of formal education were included in the study. All participants underwent accurate neuropsychological examination. The discourse analysis was performed on narratives collected on a cartoon-picture description task. Productivity was similar in both groups. However, the schizophrenic participants produced more semantic errors and their narratives were less informative and more tangential. Correlations between neuropsychological and narrative measures help explaining such aberrant discourse behaviour.

10 - SEEKing cohesion in student essays: High vs. low prior knowledge

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Expository essays of high and low prior knowledge students were evaluated on three measures of text cohesion. The study also looked at how these coherence measures were affected by implementing SEEK, a web-tutor that aids students in gathering reliable information. Significant differences were found between low and high knowledge students on measures of spatial and temporal cohesion, with low knowledge students writing more cohesive essays. No effect was found due to the web-tutor. The Coh-Metrix computer (http://cohmetrix.memphis.edu/) tool was utilized to assess student essays on three common dimensions of text cohesion (causal, temporal, and special). For a full description of the analyses, refer to Graesser, et al. (2004).

11 - Force dynamics of causal and adversative connectives. A visual-semantic double task study

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According to the "Force Dynamic" theory, the processing of causal and adversative sentences implies specific force dynamics simulations (Talmy, 1988). We present a double task paradigm in which participants listened causal and adversatives sentences, then, they saw a visual animation that either matched or mismatched the sentence force dynamic. Finally, they performed a comprehension task. Participants' error rate was larger when the semantic of the connective matched the visual animation, supporting the Force Dynamic hypothesis.

12 - Elaborations for the validation of a causal bridging inference in text comprehension

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The validation model claims that before a causal bridging inference is accepted, it must be validated by existing knowledge. This study examined elaboration and validation processes when such validating knowledge was not readily available. Reading time data suggested that a longer time was needed to elaborate on a sentence pair not linked by familiar knowledge than a causally related pair, but suggested that the validation was performed. The think-aloud protocols provided evidence of elaborations.

13 - Ontological similarity and the limits of plural reference

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According to the scenario-mapping account of pronoun resolution, plural pronominal reference is felicitous to the extent that individual entities share a common role in the scenario. The limits of the facilitation that the conjunction *and* can have on plural pronominal reference was investigated by manipulating the ontological similarity of the individual entities in continuation-production and eye-tracking experiments. Results suggest that production of plural pronouns to ontologically dissimilar entities is possible but not preferred, while there is minimal difficulty during on-line processing.

14 - Enemies and friends in the (orthographic) neighborhood

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Many models of word recognition predict that orthographic neighbors (e.g., *house*) of target words (e.g., *mouse*) will be activated during word processing. Cascaded models predict that semantic features of neighbors get activated before the target has been uniquely identified. In two studies, using single words or sentences, we obtained evidence that semantic decisions to target words were affected by semantic properties of neighbors. These results provide support for cascaded models of word recognition.

15 - Using reading strategies and proficiencies to predict performance on online and offline comprehension assessments

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Performance on overall measures of reading comprehension has been linked to proficiencies in reading processes and behaviors. Additionally, performance on these measures has been associated with the use of specific reading strategies (self explanation). This study examined the extent to which reading strategies and performance on measures of reading proficiency differentially predict online (while reading) and offline (after reading) comprehension. Results suggest that proficiency measures predict offline measures of reading comprehension best, while use of reading strategies best predicts online measures.

16 - Question generation in expert tutoring

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Question asking and answering are essential to learning. This research provides an analysis of the types of questions that occur in expert and non-expert tutoring sessions. All tutor and student questions in twenty tutoring sessions were coded on three questioning dimensions: Question Specificity, Question Generation Mechanism, and Question Content. Results indicated that expert tutors asked more Common Ground, Low Specificity and Short-answer questions than non-expert tutors, an indication that expert tutors are more fine-tuned to students' levels of understanding.

17 -The effects of prereading instructions on readers' encoding of irrelevant text

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Prereading instructions that focus readers' attention on relevant elements of texts influence moment-by-moment comprehension. We examined whether analogous instructions with respect to irrelevant text elements might similarly influence reading activity. Overall readers took longer to read irrelevant than relevant text elements, while instructions to ignore irrelevant information failed to reduce this effect. In addition, instructions to actually focus on irrelevant information increased reading times to such information. These results have implications for interactions between instructions and readers' attempts to comprehend text.

18 -Emotional valence of perfumes names influences the memory for advertisements

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In this study, we explored whether the memory for perfumes advertisements varies as a function of the valence of the name of the product. Three types of advertisements were compared: the name of the perfume was either negative (e.g., Poison), or positive (e.g., Chance) or neutral (e.g., Water). Using a free recall task and a recognition task, we showed that the name of a perfume has to be considered in memory for advertisements.

19 - Suppression and reactivation of inappropriate information on spatiality: The effect of the readers' working memory capacity

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We investigated the influence of spatial dimension on the construction of a coherent mental representation of a text. The participants were instructed to read texts that contained two types of spatial information, one relevant to the text topic and one irrelevant. We then tested whether the irrelevant information was first inhibited and re-integrated into the memory representation of definitely suppressed. Our main results firstly confirmed that irrelevant information can be retrieved into the memory representation and, secondly brought into the fore the importance of the reader's visual-spatial working memory capacity for building a coherent mental representation. This study also showed that inhibition and suppression and two relevant steps involved in this construction.

20 - When bottom-up meets top-down: Measures for profiling component skills of adolescent readers using school texts

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This paper introduces a new battery of measures for investigating individual skill profiles of adolescent readers. The assessment includes a set of tasks that probe word recognition, fluency, vocabulary, and various comprehension processes all on the same passages. Preliminary results confirm wide variation

in individual differences in bottom-up and top-down processing that affect comprehension scores. The assessment has potential for identifying strengths and weaknesses in component reading skills.

21 - Using background colour to improve sentence memory

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In an experiment we explored the potential of using background color to signal related ideas in a text. Participants read four-sentence narratives, the last being a conclusion for the story. The conclusion varied on its degree of causal relatedness to each of the three first sentences (low to high), which were presented in different background colors. Recall improved when the conclusion background color was the same as the highly related sentence.

22 - Effects of Chat vs. IM on team coordination and task work

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Although they are both forms of computer-mediated communication, Instant Messaging (IM) and multiparty chat rooms (Chat) differ in how they support workspace awareness and conversational grounding. We examined the effect of using IM vs. Chat in an experiment in which groups solved homicide cases. Medium had little effect on conversational efficiency or performance, but influenced message content. In addition, people using IM evaluated their interactions more positively. We conclude that IM is preferable for remote teamwork.

23 - Knowledge construction in open and closed web learning environments

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Two studies were conducted on the effects of type of task in a web-learning environment, being either well-defined or ill-defined, on the learning gain of children in sixth grade. In Study 1, we found that children with low vocabulary learn more in an ill-defined task, which is in line with the literature on information seeking. Study 2 extended the results to quantity and quality of learning in interaction with understanding ‘good’ and ‘bad’ information sites.

24 - Sensitivity to temporal, spatial and character attribute information during situation model construction: Contrasting two versions of the Event-Indexing Model

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We present three reading time experiments investigating how readers keep track of information about temporal, spatial and character attribute information as they update their situation models. We distinguish between two versions of The Event-Indexing Model. We report strong evidence that readers construct and update their situation models on a word-by-word basis. We show how a version of the Event-Indexing Model operating along immediate and incremental processing principles is able to account for our data.

25 - Assessing comprehension of single and multiple texts by verification tasks

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Assessment of text comprehension usually focuses on aspects of students' understanding of a single text. Our intention was to construct useful measures that also address how students comprehend multiple texts. A battery of tests constructed by Royer et al. (1996) to measure both surface and deep understanding of expository text were further developed to include a verification task focusing especially on intertextual understanding. The preliminary results suggested moderately reliable and valid measurements, but further reliability and validity analyses followed by test revisions are needed.

26 - So how do you feel about this? An ERP study on opinion poll comprehension

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What happens in the brain when people have strong feelings about what they read or hear? We recorded EEG as people of radically different political orientation filled out a realistic opinion poll on societal matters (e.g., abortion, immigration, drugs, euthanesia, religion, premarital sex, gay marriage). Relative to attitude-consistent control words, attitude inconsistent words elicited a positivity between 400-700 ms in ERPs, as people were reading the statement. Opinion poll statements thus incrementally unlock the relevant attitudes.

27 - An investigation of vocabulary learning through vocabulary builder

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The aim of this work is to describe a new vocabulary instructional tool called Vocabulary Builder (VB). VB is an interactive word inference game where students are presented with target vocabulary terms in natural reading environments. VB supplies sentences through an automated text selection tool that finds text that aim to promote word learning. The students' goal is to try to infer the meaning of the target word based on the contextual cues given in the text. Feedback is given indicating how close the students' response is to the meaning of the target word using natural language process tools.

28 - Frequency and lexical marking of different types of conditionals by children and adults in an elicitation task

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This study investigates the types of conditionals adults and children produce in an elicitation task (*If John is tired, then …*). Content conditionals express relations between events in reality (*… he must go to bed early*), whereas epistemic conditionals express relations between states of thinking (*… he has been working hard today).* The experiment showed that content conditionals are the default answer.

However, age and lexical markers are two factors that influence the number of epistemic conditionals.

29 - Impact of lexical familiarity on eye movements during visual search for verbal information

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This study looked at eye movements of participants searching for previously read verbal expressions (the targets) within lists. The vocabulary was either familiar or specific to neurosciences. Ocular fixations were longer for specialized vocabulary during target reading, but not during visual search. Whatever the vocabulary, fixations were shorter during visual search than during target reading. This suggests that even with meaningful expressions as targets, visual search for verbal material does not involve automatic semantic activation.

30 - The relationship between news media and argument quality

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The current study addressed whether there is a relationship between watching certain news channels and the ability to construct a coherent argument. Participants were asked to construct an argument on one of three controversial topics. Participants then rated the frequency that that they watched certain news programs. Arguments were scored using LIWC and Coh-Metrix. It was found that frequently watching Fox News is related to expressions of anxiety and reduced causal cohesion in arguments.