Comments on Graesser, Singer, and Trabasso

An issue with verbal methods of inference extraction
CO
"Since the key between online and offline inference is essentially the time from reading any given section (a fraction of a second from the last word read would be considered "still reading" where as a minute from it would not be), the time required to process though from an "alternate" (i.e. non speech) format to verbal expression could vary from an individual who experiences inner speech and an individual who does not and experiences say, inner seeing (i.e. visual thinking)."
Heavey, C. L., & Hurlburt, R. T. (2008). The phenomena of inner experience. Consciousness and Cognition, 17, 798-810.

Background Knowledge Retrieval as a Type of Categorization
CV
"Graessar et al's model relies highly on the use of working memory (WM) and ways which the mind transfers information, both from the text and from long term memory (LTM), to and from WM. One of the things that I found most interesting about this, is the potential link between information retrieval from LTM and the categorization models that we have previously studied. Graesser describes the background knowledge stored in LTM as representations of particular experiences, general scripts, and excerpts from other texts which are recalled and activated with different costs depending on how familiar the background knowledge is ..."

The Connectionist Model Needs to be Revisited with Modern Resources
DG
"Lastly, I thought that the long-term, short-term, and working memory [page 376] could perhaps be well-implemented using recurrent neural networks, and the online learned inference structure that "occurs when an inference receives a high strength of activation from multiple information sources, and it satisfies the constraints from multiple information sources." [page 382] could perhaps be modeled well by graph neural networks. I'd be extremely interested to see a modern revisitation of such text understanding models, with such modern approaches, and with a much stronger emphasis on implementation and results than on pure theoretical structuring."

Unifying Memory-based and Constructionist Models
JR
"The constructionist approach outlines an strategic way of reading a text. In reading a text, there is most certainly a strategic component, but there are also certain passive senses which are activated by signals in the text related to the association of other information."

van den Broek, P., Rapp, D. N., & Kendeou, P. (2005). Integrating Memory-Based and Constructionist Processes in Accounts of Reading Comprehension. Discourse Processes, 39(2-3), 299–316.

Working Memory For Text Comprehension
ES
"<the paper> claims that "comprehension succeeds to the extent that there is harmony among three representations: (a) the author's intended meaning of the text, (b) the explicit text, and (c) the reader's constructed meaning of the text." This may sound intuitive, but when explicitly stated, it provides a comprehensive framework for determining the level of understanding of a reader. "

Knowledge-based Inferences and Connections to the Construction of Causal Maps
NK

"We previously found in the self-chosen article from last week that one of the natural goals of children is to create causal maps [2]. Thus, we could predict that causality maps are central to our development of "understanding" and consequently that knowledge-based inferences include causality maps for the reading in question. This paper does in fact validate our hypothesis by referring to the "causes and motives" as critical inferences for the constructionist model [1 - 373]."

"the paper mentions the difference between inferences made in expository versus narrative texts."

[2] Gopnik, Alison, et al. "A theory of causal learning in children: causal maps and Bayes nets." Psychological review 111.1 (2004): 3.

Narrative vs Expository Text in Classroom
AO

"This comprehension is only possible when there is some relevant background or world experience. When enough comprehension is performed, the reader is capable of asking questions and inferring new knowledge. In a way, the quality of knowledge inference is related to the background of the reader (how rich it is). A weird conclusion from this is: We comprehend something as much as we know about it."

"Relevant to Graesser's study, Vidal-Abarca et al. investigated the effectiveness of narrative vs expository text in knowledge-inference for 8th graders. They found out that when reading stories, readers are more likely to make inferences. On the other hand, reading expository text may not engage in inference activity as much. According to their study, adding narrative information may trigger the reader's inferences. When readers connect the events causally by narrative, a more coherent representation can be sought. Their findings imply that causal constructionist theory is a reasonable approach for improving knowledge-inference."

Eduardo Vidal-Abarca, Gabriel Martínez, and Ramiro Gilabert. "Two procedures to improve instructional text: Effects on memory and learning." Journal of Educational Psychology 92, no. 1 (2000): 107.

Comparing Alternate Models of Inference Generation

GG

"The minimalist hypothesis says that the only on-line inferences are "based on easily available information" (383) or "necessary for establishing local coherence" (383). The Current-State Selection (CSS) Strategy also emphasizes local coherence, focusing on the causal connections between incoming clauses and causal antecedents (383). When no such connection can be made by accessing the STM, a local coherence break occurs and the LTM is searched (383). "

Comprehension and Knowledge-Based Inferences

SC

"However, by going through this information, we could easily think that the truck driver pressed a hard brake to stop the truck immediately and that's why a car driver who was coming behind the truck could not understand why the truck was braking suddenly and as a result, he/she was rear-ended. The text did not provide this much information at all, but we have produced the whole sequence in our minds,"

Constructionist theory and knowledge based inference

BD

"I liked how this paper presented the constructionist theory of inference generation. The author considers all sources of information while formulating this theory – the reading text, background knowledge as well as the context of the message [376]. We can relate this to Palmeri et. al. [2] where the expert differentiated from the novice as they had more background knowledge on a given object.