

Benson Symposium

The Benson Symposium took place at Case Western Reserve University Wednesday, March 7, 2007. It was held from 2–9:30 p.m. in Room 9 of the Inamori Center on the ground floor of Crawford Hall.

Audience members for the mini-symposia were invited participants only. The guest lecture was also open to students and the general academic public as one of the Department of Cognitive Science's colloquia.

Benson Symposium Schedule

2 – 3:30 p.m.: Mini-symposium I

- Merlin Donald, Cognitive Science, CWRU: Introduction to the symposium: "Evolving Constructions of Time"
- Charles Burroughs, Art History, CWRU: "Time & Memory: Medieval Constructions"
- Yanna Popova, Cognitive Science, CWRU: "Time and Self-projection"
- Open discussion

3:30 – 4 p.m.: Coffee break

4 – 5:30 p.m.

- Guest lecture by Professor Ciarán Benson, University College, Dublin: "Emotions in the Maintenance & Reproduction of Identities: From Cultural to Personal Memory."
- Discussion

5:30 – 7 p.m.: Break for light buffet dinner

7 – 9:30 p.m.: Mini-symposium II

- Fey Parrill, Cognitive Science, CWRU: "Time and the Body: Representations of Time in Gesture & Signed Language"
- Per Aage Brandt, Cognitive Science, CWRU: "How Do We At All Symbolize and Remember Times?"
- Sara Waller, Philosophy, CWRU: "Primates, Philosophy, Time and Memory"
- Open plenary discussion

Background Themes

Cognitive researchers have long puzzled over how the human mind constructs a representation of time. The proposed conference will address this question from the perspectives of several disciplines.

For one class of theorists, our experience of time is primary, and given directly in the senses, or in what William James called "the specious present." For others, the perception of time is constructed only in memory, and is a byproduct of a class of memory supposedly found only in human beings, "episodic" memory. For a third group of theorists, time is a highly abstract representation constructed in culture. Although it may seem obvious that there must be some truth in all three theories, researchers in these different areas have not really communicated with one another on a regular basis. It should prove useful at this point to examine how and where these theories contradict each another, support one another, or suggest new directions to pursue.

The sensory/specious present model has proven popular with laboratory researchers who focus on the relationships between experience and objectively measurable physical events, and with brain researchers. The theory that drives this research assumes that our sense of time is constructed from elementary chunks or irreducible “moments.” These are the atoms of time, from which all representations of the temporal structure of events must be built. This theory, first proposed in the 19th century, has recently received support from neuroscience, engineering and computational science. It postulates that time is represented in the brain in a componential manner, computed from a fixed base rate in certain neuroanatomically defined regions of the brain. A complex neuronal circuit maintains a “count” of base units of time, and this defines the apparent duration of a given episode of experience. Although there is considerable controversy over what the base rate might be, and where it is generated, this class of theory invariably implies that the length of experienced time is proportional to the number of base units that occur within the measured “objective” time period in question, and, as a corollary, that we cannot perceive anything shorter in duration than one of these elementary “moments.” Time thus always ticks by, much like clock time, in multiples of base units, and there is little room for cultural variation in this model. The main focus of this kind of research is to locate and describe the internal neuronal “clock” that emits the fixed base rate, and sets the duration of a “moment.” There is also interest in determining whether neurotransmitter chemicals can slow down the internal clock, or speed it up, and in locating the tracking circuits needed to mediate the conscious experience of time passing.

The episodic memory model stems from a long tradition of research on human memory. In contrast to the former approach, which implicitly attributes a sense of time passing to many nonhuman species, the memory model attributes an imaginative capability called “time travel in memory” to the human species, and no other. In essence, time travel is a defining human mental capability, and forms the basis of autobiographical memory. Endel Tulving is the major theorist behind this idea. The passage of time is not necessarily perceived directly, but rather constructed in memory, but this can be achieved only if the brain’s memory system is equipped with a uniquely human imaginative capacity to “travel” from present to past, or to project experience into the future. Tulving ties this capability to consciousness itself. In effect, one’s larger perception of time comes from one’s ability to compare past experiences with present ones, and project these into the future. This approach allows for a small amount of cultural variation on the interpretative level, but once again, cultural input is secondary, and the research focus is on the fundamental mental mechanisms of imaginative time travel. Such mechanisms are presumably found universally, in all people and all cultures of the human species.

The approach that we shall call the “cultural” model of time, supported much more widely in the humanities and social sciences than any other model, places emphasis on how the worldview of specific cultures can transform and modify the perception of time in the members of that culture. Every aspect of time – the apparent duration of events, their rate of passing, their redundancy, indeed, the very experience of time itself, is relative to a cultural worldview, and, to a large degree, the product of that worldview. This approach has been validated by focusing on cultural differences, and on studying the gradual unfolding of a time-sense in children. It allows a relatively minor role in our experience of time for some kind of universal biological clock or primitive memory record, but the larger sense of time passing, and one’s ability to navigate the virtual world, framed in virtual time, is deemed largely to be a product of culture and possibly, to a significant degree, of technology.

This conference will try something unique and truly cross-disciplinary: a frank exchange of theoretical conceptions of time from all three vantage points. In normal academic discourse, ideas as disparate as these do not have the opportunity to collide. Can these different classes of

theory influence one another? Should they? If so, how and where? How does our memory record of passing time coalesce with our internal clock, if there is such a thing? How might these be modified, or even fundamentally altered over the long term, by culturally-programmed experience? And how do our narrative accounts of experienced time map onto the representational hierarchy that dictates our perception of time?

The symposium might influence scholars and scientists to build a cognitive model of time that will explore such questions, and lead to a unified theory that can account more fully for our conception of time.