

Edwin Hutchins

"I believe that cultural practices are a key component of human cognition."

Occupation Professor of Cognitive Science, UC San Diego
Distributed Cognition and HCI Lab

Work Context **Distributed Cognition, Cognitive Ethnography, HCI**

Influence

Considered the "father" of distributed cognition, a framework for studying, designing and evaluation of human-computer interactions. The theory posits that cognition is not merely limited to the individual or what goes on in the brain of the individual, but spread among the socio-cultural material world and time. Hutchins stresses the importance of deep ethnographic methods for true understanding of cognitive processes in what he calls "cognitive ethnography".

Career & Achievements

- 1975:** Social Science Research Council: Foreign Area Dissertation Fellowship
Supported cognitive anthropology fieldwork in Papua New Guinea. Studied cognitive process of legal proceedings of the islanders.
- 1978:** Alfred P. Sloan Foundation: Postdoctoral Fellow in Cognitive Science
Transitioned into a more cognitive science based area of research. Studied cognitive process of ship navigation of the western world compared to that of Micronesia.
- 1985:** John D. and Catherine T. MacArthur Foundation: Foundation Fellow
aka "**Genius Grant**" - Studied the cognitive process of ship crews in the US Navy. Developed theory of distributed cognition. Worked with many other important HCI thinkers such as Don Norman and James Hollan.
- 1991:** UCSD Professor Founded DCog/HCI Lab
Primary area of research: distributed cognition in aviation, specifically commercial jet cockpits. Numerous publications in DCog for aviation as well as HCI.
- 1995:** Alumni Association: Professional Achievement Award
- 2002:** Cognitive Science Society: Fellow of the Society

Major Work - Cognition in the Wild (1995)

"Edwin Hutchins combines his background as an anthropologist and an open ocean racing sailor and navigator in this account of how anthropological methods can be combined with cognitive theory to produce a new reading of cognitive science. Introducing Navy life and work on the bridge, Hutchins makes a clear distinction between the cognitive properties of an individual and the cognitive properties of a system. In striking contrast to the usual laboratory tasks of research in cognitive science, he applies the principal metaphor of cognitive science - cognition as computation - to the navigation task. After comparing modern Western navigation with the method practiced in Micronesia, Hutchins explores the computational and cognitive properties of systems that are larger than an individual. He then turns to an analysis of learning or change in the organization of cognitive systems at several scales. Hutchins's conclusion illustrates the costs of ignoring the cultural nature of cognition, pointing to the ways in which contemporary cognitive science can be transformed by new meanings and interpretations."

Other Important Publications

- **Direct Manipulation Interfaces** with James Hollan, and Donald Norman (1985)
Discussion on benefits and disadvantages of direct manipulation in interfaces and how distance from action can influence feelings of “directness” and create gaps in execution and evaluation.
- **Distributed cognition: toward a new foundation for HCI research** w/ Hollan and Kirsh (2000)
“The ethnography of distributed cognitive systems retains an interest in individual minds, but adds to that a focus on the material and social means of the construction of action and meaning. It situates meaning in negotiated social practices, and attends to the meanings of silence and the absence of action in context as well as to words and actions”

Relation to other cool HCI thinkers

Herbert Simon <i>Administrative Behavior</i>	Related to Hutchins in his study of human cognition. Simon's book <i>Behavior</i> detailed the process by which a rational decision is made by a human, and how an individual helps an organization reach its best result.
Clifford Geertz	Related to Hutchins in his anthropology background. Geertz also studied how symbols are constructed for “public meaning,” which is related to Hutchins' publication on “lexicon” as “a set of public structures for denoting or implicating shared meanings between an interacting population.”
Robert Kraut	Related to Hutchins in his ideas of "social cognition," and his findings that proximity is important to human collaboration. Having knowledge and awareness of teammates affects the decisions and activities of an individual, which is related to Hutchins' idea that human cognition is inherently social.

References

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- Hutchins, Edwin, (1995) *Cognition in the Wild*. Bradford Books.
- Hutchins, Edwin. "How a Cockpit Remembers Its Speeds." *Cognitive Science: A Multidisciplinary Journal* 19.3 (1995): 265-88. Print.
- Hutchins, Edwin, James Hollan and David Kirsh. "Distributed cognition: toward a new foundation for human-computer interaction research" *ACM Transactions on Computer-Human Interaction (TOCHI)* 7.2 (2000).
- Kraut, R. E., Fussell, S.R., Brennan, S.E., & Siegal, J. (2002). Understanding effects of proximity on collaboration: Implications for technologies to support remote collaborative work. In P. Hinds & S. Kiesler (Eds.), *Distributed work* (pp. 137-162). Cambridge, MA, US: MIT Press.
- Simon, Herbert. (1976). *Administrative Behavior*. New York: The Free Press.