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# Analyses of Work Across Disciplinary Boundaries

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## Seeing in Depth

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On oceanographic research vessels scientists from different disciplines must work together to obtain samples from the sea beneath their ship. Such juxtaposition of not just theory, but actual laboratory practice, creates unique possibilities for synergy, as members of one discipline make use of the tools of another. Using videotapes of technicians deploying a probe in the mouth of the Amazon, this paper investigates how multiple kinds of space including the sea under the ship, graphic representations, the work space of the lab, and embodied participation frameworks for the organization of tool-mediated human interaction are constituted through a range of temporally unfolding, work-relevant, situated practices. Particular attention is paid to how three parties work together to precisely position the probe at a spot where a geochemist wants to take samples. Because each actor uses alternative tools to organize his or her perception in ways appropriate to complementary tasks required for the successful accomplishment of the sampling run, each sees the place they are looking at together in a very different way.

## Making and Using Generalizations: Interdisciplinary Consulting in Entomology versus Architecture

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Cognitive processes of making and using generalizations are examined through comparative ethnographic studies of work in field entomology and architecture. These processes depend upon interdisciplinary collaboration, and our analyses focus on video records of workplace meetings between practitioners and consultants from other disciplines. The entomologists are constructing general claims about the foraging behavior of subterranean termites. To do this, they must simultaneously account for competing claims of other research groups and for contingencies in their own field data. Thus, the entomologists can be said to *make* new generalizations. As part of this process, they consult specialists in chemistry and biostatistics. The architects are remodeling historic public buildings and must hold their

proposals accountable to a variety of existing generalizations (e.g., multiple code restrictions). In this sense, architects can be said to *use* generalizations. They consult specialists from structural engineering and historical preservation to map the emerging design onto existing constraints. Our comparison of interdisciplinary consulting across these cases supports two observations. (1) The relation between generality and specificity is socially constructed and negotiable, though the cost of dissent can be high once a generalization is established. (2) In consulting relations, specialists provide distinctly different perspectives and embodied skills for working with the "same" situation. While these differences sometimes matter for the outcome of projects, their interaction is largely unstudied.

## Categories and Cognition: Material and Conceptual Aspects of Large Scale Category Systems

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Formal and bureaucratic classifications systems span disciplinary and organizational boundaries. As infrastructural tools, they often create a means of communicating across traditional divisions. This communication may take place across wide geographical scale or long periods of time, even decades. It relies not on consensus, but on interpretation of the formal system, and local modifications suited to the practicalities of the users. This paper will discuss several empirical examples of large-scale classification systems where this process occurs: The International Classification of Diseases, the Nursing Interventions Classification, and race classification under apartheid in South Africa. Classifications are both conceptual and material. Very little work has examined these features together, especially for wide-scale implementation. By comparing these examples, the paper explores how classifications are linked cognitively and practically with social organization, and how they help span traditional divisions of discipline and organization. Several dimensions are identified: 1. the ubiquity of standardized classifications in modern society; 2. the practical politics of crafting classifications across disparate viewpoints and locales; 3. The historical indeterminacy of classifications as traceable records; and 4. The crucial role of residual categories for managing organizational practice.