

Center for Cognitive Science

University at Buffalo, State University of New York

Wednesday, December 4, 2002

2:00 pm - 4:00 pm

280 Park Hall

North Campus

"The Categorization Dilemma That Airport Security Systems Face: And Why It Matters"

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X-ray screeners at airport security checkpoints perform an important categorization task in which they detect targets amidst multiple, overlapping images. Their performance must be evaluated to gauge the security system's adequacy. A natural and feasible approach to evaluation is to build a library of target images and test screeners by sampling from these. We built the Screener categorization task to assess this library approach from the perspective of the categorization literature. In the Screener task, participants search for members of target categories in complex displays like those that luggage presents. We find that when targets are sampled from a library with repetition so that familiarity develops, participant screeners rely on recognizing familiar targets instead of applying category-general knowledge. These results ground experimentally similar observations that have been made within non-domestic aviation security (i.e., observations of familiarity effects in the detection of ecological threat images). These effects may illuminate the processes of categorization under conditions of visual complexity. They also suggest that the library approach to evaluation risks failures of security wherein unfamiliar targets go undetected. We consider an alternative approach.

Refreshments will be available

Everyone is welcome to attend!

<http://wings.buffalo.edu/cogsci/html/2002fall.htm>

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