Evaluating Reliance on Combat Identification Systems: The Role of Reliability Feedback

Greg A. Jamieson, University of Toronto

Heather F. Neyedli, University of Toronto

Lu Wang, University of Toronto

Justin G. Hollands, Defence Research and Development Canada

A pair of laboratory studies examined the effects of system reliability information and interface features on user reliance on an individual combat identification system. The first experiment showed that providing reliability information through instruction led to more appropriate reliance. In the second experiment, a human-machine interface displayed the reliability information. The results showed; 1) that the method of displaying reliability information affected the participants' sensitivity in discriminating the target from noise, and 2) that the display format (integrated vs. separated) affected the participants' reliance on the combat identification system. Taken together, the findings yield implications for the design of interfaces for individual combat identification systems and for the training of infantry soldiers. Finally, a new method of measuring reliance on automation was developed and employed across both experiments.