

Costs and Benefits of Types of  
Human to Robot Communication

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ABSTRACT:

Successful communication between robots and humans in combat zones is critical to many military tasks. In an experiment, participants are tasked to find a target in various simulated indoor environments by directing a robot. The subjects use one of three categories of commands: verbal-symbolic (i.e., use of object names permitted), verbal-directional (i.e., directions only), and manual and are also either permitted to use a map or not use a map. Analyses focused on the costs and benefits of these experimental conditions and on the frequency of spoken object names. We draw conclusions about the success of various human-to-robot communications and discuss the future applications this research has on the battlefield.

KEYWORDS: human-to-robot communication, verbal-symbolic commands

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