

Self-initiated and respondent actions in a simulated control task

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Abstract

Operators often need to combine self-initiated and respondent actions. Two experiments dealt with the relative importance of these two types of actions as a function of the predictability of the system and the available information. Participants monitored three stations with different frequencies at which interventions were required. They were aided by warning cues, indicating the need for interventions. The frequencies of inspections of the stations, the response to the warning system, and the overall performance were assessed for warning systems with different diagnostic properties. Participants adapted their responses to the relative frequency of required interventions, and the reliance on and compliance to the warning system depended on the warning characteristics. The results support the notion that events, such as warning signals, have a complex role in the ongoing activity of the operator and are integrated into the set of information from external and internal sources that guide the operators' actions.

KEYWORDS: Alarm systems; Self-initiating and responding; Controlled task