

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

A sequence analysis of actions in complex system comprehension

Permalink

<https://escholarship.org/uc/item/3kz3912p>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 32(32)

ISSN

1069-7977

Authors

Jeuniaux, Patrick
Tremblay, Sebastian
Gagnon, Jean-Francois
et al.

Publication Date

2010

Peer reviewed

A sequence analysis of actions in complex system comprehension

Patrick Jeuniaux

Universite Laval

Sebastien Tremblay

Universite Laval

Jean-François Gagnon

Universite Laval

Daniel Lafond

DRDC-Valcartier

François Bernier

DRDC-Valcartier

Abstract: Complex systems have a broad network of relations for which human comprehension is severely limited and analysts often rely on the support of technological systems. In this study we investigated whether comprehension can be augmented by IMAGE – a set of interactive visualization, data exploration and knowledge representation tools – and explore behavioural signatures associated with the optimal use of IMAGE. The comprehension and use of IMAGE of 24 participants were examined in the context of a scenario involving military convoys evolving their strategy according to the reactions of a hostile and dynamic environment. Comprehension was measured by a score normalized in function of a randomly generated exploration of the system. A sequence analysis was performed to extract the pattern of IMAGE-user interaction. Our results reveal a great diversity across participants and that transitional probability of key IMAGE events is not related to augmented comprehension in a simple structured way.