

RESILIENCE ON THE SEVEN SEAS: PERSPECTIVE-TAKING IN ANTICIPATORY SHIP NAVIGATION

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Abstract

The concept of system resilience implies the capability to anticipate and deter problems in addition to handling disturbances. In maritime navigation interpreting the overall traffic situation and planning your route draws from ship-to-ship communication and from reading the intentions of the other ships. This is essential in anticipatory and risk-minimizing ship navigation, which involves increasing the distances between ships through joint ship-to-ship planning and coordination. However, empirical studies on these activities seem to be scarce.

This qualitative study is based on interviews and observations of navigational decision-making at a ship simulator. The study participants were experienced maritime pilots (n=6) and other professional mariners (n=2). The results suggest that expert navigators envision the possible future locations and trajectories of nearby ships, this being done in view of assessment regarding the other ships' communicative capabilities, situational awareness, tasks, aims, maneuverability and predictability. More generally, the results imply that navigation involves perspective-taking as expert navigators aim to consider the traffic situation not only from the perspective of their own ship but also from the perspective of the other ships, their situations and capabilities. Based on the interview results, a model for maritime perspective-taking is presented, it involving ship-profiling (the features of ship and crew) as well as situational assessment (how the other ship is likely to behave in the present or near-future conditions).

A good navigator interprets the traffic of ships nearby as a 'playing field of varying actors' all of which have their different aims, different degrees of freedom and reliability, and which can be communicated with differently. Perspective-taking takes part to this shiphandlers' interpretation of the traffic setting and therefore promotes maritime system resilience.