MAKING ROOM FOR SLACK: STRATEGIES FOR PRESERVING CURRENT ADAPTIVE CAPACITY AND SNEAKING IN SOME MORE

Michael F. Rayo [1]
Tarcisio Abreu Saurin[2]
[1] *The Ohio State University, USA*
[2] *Federal University of Rio Grande do Sul, Brazil*

Abstract

Efficiency vs. Thoroughness. Performance vs. Safety. Resilience Engineering vs. The World! We want to start the conversation with the REA community that these do not have to be either/or propositions. It requires tools and techniques that cement a shared understanding about what drives safety and performance in complex sociotechnical systems: adaptive capacity. Adaptation is not "deviance", normalized or otherwise. It is critical to safe and effective functioning of every system. However, it is not cheap! At least, that is the perception. We will talk about the techniques that we have devised to identify and prioritize areas where adaptive capacity is and is not critical. We will also share strategies to reduce the cost of designing in adaptive capacity from conceptual design through implementation and real-time operations. For example, a static buffer of extra resources will likely be seen as waste, and pressure will build to absorb it opportunistically for other initiatives (Woods & Hollnagel, 2006). However, designing a system that dynamically makes use of extra resources as needed, borrowing in times of need, has more upfront design costs but lower operating costs (Saurin & Werle, 2017). Dr. Saurin will share his work on charting out different types of adaptive capacity (slack) (Saurin, 2015) and creating a framework for identifying the level of requisite adaptive capacity (Saurin & Werle, 2017) to help decision-makers see the need for adaptive capacity. Dr. Rayo will share insights gathered from a recent analysis of a 2013 International Space Station mishap in which design decisions made as early as XXXX unintentionally removed critical capabilities to recognize the need for change, coordinate a response and respond in a timely manner. He will also share how small investments that preserve dynamic conceptual slack (i.e., multiple available perspectives) made a big difference in his healthcare system design work.

REFERENCES

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