Crew Resource Management (CRM) training has evolved since its inception in the 1980s to better accommodate the operational needs of flight crews. However, even as the aviation and research communities have pointed to the potential benefit of providing CRM training, some criticism continues to emerge periodically which claims that there is no concrete evidence of its impact on flight deck performance and safety. Therefore, it is imperative to develop tools that allow researchers and, more importantly, practitioners, to more effectively and objectively assess training effectiveness and identify whether or not desired CRM behaviors are being put to practice during line operations.

This study focused on evaluating pilots' CRM schemas and identifying differences in CRM knowledge structures among pilots. Differences in CRM knowledge and opinions about training could be an indication of the existence of what Hatano and Inagaki (1986) have described as two distinct types of expertise, namely, routine and adaptive expertise. The study sought to identify differences among routine and adaptive expert pilots in CRM knowledge structures, their perceptions on the value and efficacy of current CRM training evaluation, along with their opinion on how CRM training effectiveness could be more accurately assessed.

Results from 255 pilots showed that, in general, participants had a positive view of CRM training and training evaluation, regardless of their type of expertise. Evidence of potential differences in the structural knowledge of CRM between routine and adaptive experts, as well as, differences in their opinions about CRM training, evaluation, and flight deck automation was identified. Analysis of survey scores and free response items show the existence of a third category of experts, between routine and adaptive expertise (whom I call transitional experts).

The results from automated text analysis and quantitative analyses, provide evidence that assessment of CRM schemas could potentially be used as a way to evaluate CRM training effectiveness. The results of the study also indicate that identification of specific training needs for each group of expert may be possible through the assessment of CRM schemas and type of expertise. Implications for practice and theory, limitations of the study, and suggestions for future research are also provided.

Educational Career:
Bachelor's of Psychology, BA, 2010, Florida Gulf Coast University
Master's of Human Factors and Systems, MS, 2013, Embry-Riddle Aeronautical University
Master's of Modeling and Simulation, MS, 2016, University of Central Florida

Committee in Charge:
Florian Jentsch, Chair, Psychology
Randall Shumaker, Institute for Simulation and Training
Shawn Burke, Institute for Simulation and Training
Valerie Sims, University of Central Florida

Approved for distribution by Florian Jentsch, Committee Chair, on June 11, 2018.

The public is welcome to attend.