

Stress-Laden Communication Observations: Command Debacles Often Ignored in Simulations

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ABSTRACT: A standards-based approach to remediate the observed dearth of defective communications in combat simulations is proposed. This paper adduces abundant examples of historical battles being lost, lives wasted and morale destroyed by faulty communications and similar failures in “dual-use communities”. However, after several decades of work in the battle-space simulation discipline, the authors have not seen, nor can they find any documentation that reports the inclusion of, representative communication failures in battlefield simulations. The heart of the paper commences with a section recounting communication failures on real battlefields and the destructive impacts thereof. Also addressed are similar failures in other high-stress professions. A short section relates the types of communications failures observed by the authors in actual situations. Further consideration is given to varying communication modalities. This is seen as important if the programmers are to be able to realistically and consistently model the actual communication failures. To further explicate these issues, a section is devoted to a background of communication failures in a wide range of contexts and the success rate of training efforts to counteract such negative impacts. The potential of incorporating any of these remediation efforts to more realistically address the analogous failures in combat situations is analyzed. Also, the paper considers future mutual discussions and research with associated researchers to benefit both the military simulation communities and the civilian communications/speech therapists. The paper then turns to the emergence in recent computational hardware and software capabilities to both better identify all of the aforementioned issues and to present a series of paths to more effective failure representations in simulations. Also this is an opportunity to alert the simulation participants and trainees to the likelihood of these failures occurring in combat. Finally, the paper closes with a charge to the simulation standards community to help remediate the absence of communication failures in combat scenarios and a call for educating the programmers to be aware of this need.

Author Biographies

DAN M. DAVIS is a Research Associate Professor at Catholic Polytechnic University (CPU) and is also active as a consultant at the Institute for Creative Technologies, University of Southern California (USC). He is currently focusing on large-scale DoD simulations and virtual human implementations. Prior to retirement, he was the Director of the JESPP project at USC for more than a decade. As the Assistant Director of Advanced Computing Research at Caltech, he ran

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JENNIFER H. NOLAN, PH.D. is the President of Catholic Polytechnic University and Professor of Psychology in their College of Arts and Sciences. Her earlier work specialized in memory, dementias, stroke and insulin resistance. She is a brain plasticity specialist and certified Cogmed provider. Previously, she was the C.O.O. and co-founder of a stroke and brain injury rehabilitation center. Dr. Nolan has taught university courses at the University of California Irvine, Loyola Marymount University, and Glendale Community College. She has conducted local and nationwide clinical trials, and published in both scientific journals and popular magazines. She received a BA in Psychology from Loyola Marymount University, Los Angeles and a Ph.D. in Neuro-Psychology from the Dept. of Cognitive Science at the University of California, Irvine.

JUDITH L. JACOBUS is retired from conducting speech therapy as a Speech and Language Specialist for more than two decades. Her experiences were in public schools settings in Orange County, California. She also previously taught for 12 years as a classroom teacher in multi-cultural communities there. Judith currently volunteers her professional skills for a local police department, so has extensive experience with dysfunctional adults and children in a variety of both every-day and traumatic situations. Her participation in amateur theatrics has more fully familiarized her with the characteristics of human behavior as they are projected via verbal, facial and body-language cues. This experience has also exposed her to the skill and art of the selection of appropriate persons for specific on-screen roles. Judith holds a lifetime Special Education Credential in Speech and Hearing Therapy, K-12 from the State of California. She earned a B. A. Degree in Speech Communications from the California State University Long Beach and an M.A. Degree in Teaching and Teacher Leadership from the Grand Canyon University in Glendale, Arizona.

MARK C. DAVIS, PH.D. is the Chief Technical Officer at Wood Duck Research, Inc, and is semi retired after careers in the US Navy and as a computer design engineer for both IBM and Lenovo. Rising to the level of Distinguished Engineer at Lenovo, he was responsible for the design of laptop computer cross-disciplinary technology, including PC architecture, embedded systems, open source and virtualization. Previous work was with IBM in the areas of software development and architecture involving security, storage and virtualization. Dr. Davis has been granted well over fifty patents that were filed during his service at both companies. He is a graduate of the Duke University NROTC program and was commissioned as an Ensign, attended nuclear power school, and served as a Submarine Officer for twelve years, including one duty tour as a classroom instructor. He left the active duty as a Lieutenant Commander to pursue a PhD. Mark holds a BSEE degree from Duke University and a PhD in Computer Science from the University of North Carolina, Chapel Hill, where his advisor was Professor Fredrick P. Books.