

PHALANX

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March 2020

Coronavirus Update

MORS is monitoring the potential impact of restrictions on travel and attendance due to the Coronavirus. We are making contingency plans to offer virtual/online participation for all events. MORS is working closely with our Government Sponsors and Industry and Organization Partners to ensure we meet the needs of our community and keep everyone safe. All changes impacting events will be immediately shared with registered participants and posted on the event websites.

Fortunately the MORS office and staff have been operating in a virtual/online environment for 6+ years and will continue to work to serve you without interruption.

Susan Reardon
MORS CEO



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- *Reading List for 2020*

A TRIBUTE TO



WAYNE P. HUGHES

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Threatcasting: A Way to Envision the Future of Multidomain Operations

LTC Natalie Vanatta, PhD, Senior Advisor, Threatcasting Lab, Arizona State University, natalie.vanatta@westpoint.edu

Over the next decade, a constellation of technologies will bring about significant advances, disruptions, and shifts within our operating environment. Yet, not only will technology evolve, but the next decade will see broad changes within societies, economies, culture, communities, and the will of nation states. Taken by themselves, these changes will have a large effect, but when taken together the effects are magnified.

Helping to understand and plan for this future operating environment is the basis of a research methodology known as “threatcasting.” Arizona State University’s School for the Future of Innovation in Society, in collaboration with the Army Cyber Institute at West Point, uses the threatcasting process to give researchers a structured way to envision and plan for risks 10 years in the future. Although the complexity of the future can seem overwhelming, this research focuses on the cyber domain and how it can revolutionize or paralyze the future.



Threatcasting was developed at the intersection of military strategy and a body of work in strategic foresight. It supports military planning processes, such as the Military Decision Making Process and Army Design Methodology, as well as typical operations research analytical processes. Specifically, threatcasting expands analysis of alternatives, wargaming, modeling and simulation, and data analysis after data farming and wrangling. Operations research seeks to deal with uncertainty, and threatcasting can illuminate a broader range of possible threats and actions to be taken to meet those threats. Threatcasting uses inputs from social science, technical research, cultural history, economics, trends, expert interviews, and even a little science fiction. These various inputs allow the creation of potential futures. Placing the threats into an effects-based model that emphasizes a person in a place with a problem

allows organizations to understand what needs to be done immediately and also in the future to disrupt possible threats. The threatcasting methodology also exposes what



events could happen that indicate the progression toward an increasingly possible threat landscape.

Threatcasting is a human-centric process. The fact that diverse practitioners participate in the modeling session is essential. Bringing together individuals from the military, government, academia, and private industry, with the objective to envision possible threats 10 years in the future, grants us the ability to brainstorm what actions can be taken to identify, track, disrupt, mitigate, and recover from the possible threats in a way that is more comprehensive than if each group had done the modeling on its own.

One of the many outputs of the threatcasting methodology are these alternate views of the future operating environment that are based on science fact while using the science fiction narrative to create a powerful story about our lives in another decade. Based on our research, the US Army and Cisco have turned these futures into graphic novellas with the intent of educating



their workforce about the contested domain of cyberspace while sparking innovative thinking on solutions.

“Graphic novellas are a medium with a rich tradition of use by the US Army,” said Lieutenant General (Ret.) Rhett A. Hernandez, former commander of the US Army Cyber Command.

“For generations, the Army has successfully used this medium for conveying important messages across its force. Today, the Army Cyber Institute is continuing this tradition based on science fiction prototypes of cyber threats it may encounter on the future battlefields.” These graphic novellas and research publications

are located at www.threatcasting.com.

Even given the state of the art today relative to strategic forecasting, military strategy, and modeling and simulation and the

data available in 1935, it is doubtful that we could have imagined the evolution in the destructive power of nuclear technology, creation of new delivery mechanisms, and a change in national will that, together, would lead us to the atomic bombs that killed hundreds of thousands of people in Hiroshima and Nagasaki in 1945. The threatcasting methodology is not a crystal ball prediction algorithm but a methodology for exploring the future that could have gotten us closer to the idea of Little Boy and Fat Man.

Threatcasting provides a framework and process to examine and imagine emerging threats in the complexity of

the 21st Century. Grounded in traditional foresight practices, leveraging centuries of military strategic thought, and agile enough to handle a quickly change landscape of adversaries, threatcasting is one way to model the evolving battle space to develop future strategies and solutions in support of multidomain operations.

About the Author

LTC Natalie Vanatta is a US Army Cyber officer and an Academy professor at the Army Cyber Institute (the Army's think tank on the cyber domain). She holds a PhD in applied mathematics as well as degrees in computer engineering and systems engineering. Natalie has also served as a Distinguished Visiting Professor at the National Security Agency and the technical director to Joint Task Force Ares. Currently, she is serving as the team leader for 01 National Cyber Protection Team as part of the Cyber National Mission Force.