VALENS GLOBAL
INTERNATIONAL STRATEGIES & SECURITY

Simulations & Wargaming in an Academic Setting

If you are interested in learning more about Valens Global Simulations, contact Elizabeth Joslyn (elizabeth@valensfirm.com).

What Are Simulations … and What Do They Offer?

Simulations are sometimes known as war games based on the origins of the practice, which became common across militaries beginning with the Prussian game Kriegspiel as a means of training officers. Since then, wargames have grown in their application, and have had profound impacts. The U.S. Navy conducted a series of games in the 1920s and 1930s that trained the commanders who would go on to win the war in the Pacific in the Second World War. A 1998 White House wargame on bioterrorism contributed to President Clinton's decision to lobby to add nearly $300 million to the nation's counterterrorism budget.[1]

Simulations do not deal exclusively with warfare and battle plans; they are not necessarily militaristic. However, they possess defining elements. As social scientists Erik Lin-Greenberg (M.I.T.), Reid Pauly (M.I.T.), and Jacquelyn Schneider (Stanford University) explain, war game-type simulations are characterized by four elements: "human players, immersed in scenarios, bounded by rules, and motivated by consequence-based outcomes."[2] In such games, human players are ultimately immersed "in scenarios where they make decisions in accordance with given rules and react to the consequences of their choices."[3]

Scholars, policymakers, and other observers discern an increasing number of benefits to the practice of simulations or wargaming. Among the benefits in a university setting are:

- A multidisciplinary perspective. Put simply, the real world is multidisciplinary. For example, an international-affairs practitioner will routinely have to think through the social, economic, ecological, and security implications of any decision. By drawing together students from numerous disciplines and making their various academic backgrounds relevant, simulations can illustrate various dimensions of the challenges being explored.

- Tactile, immersive learning. By placing students in the midst of an immersive scenario and forcing them to determine the best course of action for the actor of which they are a part, simulations create a unique learning experience that can make students think deeply about the problems they confront. The intense nature of simulations means the lessons students draw from them are highly memorable, often making a lasting impression.

- Exploration of real-world dilemmas. There is a significant difference between reading about national or global problems in a textbook and being forced to grapple with the logistics of tackling them. For example, reading about the need for multilateral action to address climate change is one thing, but having to negotiate an enforceable treaty with sufficient monitoring and enforcement mechanisms is another. The perspective simulations provide on real-world

[1] J. Furman Daniel III & Paul Musgrave, "Synthetic Experiences: How Popular Culture Matters for Images of International Relations," International Studies Quarterly 61:3 (September 2017), pp. 1, 4.
[2] Erik Lin-Greenberg, Reid Pauly & Jacquelyn Schneider, "Wargaming for Political Science Research," February 17, 2021, p. 4, http://dx.doi.org/10.2139/ssrn.3676665.
[3] Ibid., p. 6.

dilemmas uniquely prepare students to play a proactive, constructive, and thoughtful role in tackling the challenges their generation will confront.

- Relevance to social science research. As Lin-Greenberg et al. show, there is increasing interest in the scholarly community in using data from simulations "to answer questions about human behavior, either regarding rare events, or topics where real-world data is difficult to obtain." In addition to questions about emerging technologies and nuclear weapons, they note that wargames can "be useful for studying a range of international relations topics, including group dynamics in foreign policy decision making, the strength of norms, the effectiveness of treaty commitments, the development and utility of economic sanctions, the comparative effectiveness of deterrence strategies, and the fidelity of crisis signaling."[4] Valens games include unique data-capture methods to enhance related social-science research projects.

- Realistic decision making. Many simulations introduce elements to the decision-making process that differentiate them as an exercise. In addition to immersion, simulations include stressors often absent in other experiments, often referred to as the fog and friction of war.[5] According to former deputy secretary of defense Bob Work and Gen. Paul Silva, "the best wargames … seek to create an environment for applying critical reason techniques and diagnosing the characteristics of competition under the 'fog' and 'friction' of war."[6] Simulations tend to do this, simulating incomplete information environments that can frustrate and complicate decision-making. The sequential nature of wargames—having multiple rounds and decisions with varying, time-bound consequences—offers stronger incentives for participants to consider decisions more deeply.[7] And time constraints and emotional burdens additionally contribute to a unique "experimental realism."[8]

- Reflection. Wargames foster a process by which participants evaluate their own decision making. Their sequential nature forces participants to evaluate previous decisions that they have made in subsequent turns as they deal with the consequences. This self-evaluation can play out over multiple turns, as some games (including Valens games) include decisions with second- and third-order consequences.

How Simulations Function & Engage the Brain.

How simulations work, inspire decision-making, and engage the brain have all been the subject of scholarly interest. Relevant scholarship identifies that simulations (along with other sources of fiction, such as movies, games, television, and novels) create in their consumers "synthetic experiences"—mental constructs generated to process information.[9]These synthetic experiences can then affect how individuals interact subsequently with the real world. For example, President Reagan expressed concern about the vulnerability of the country's nuclear systems after watching the film War Games, which depicted an attack on that infrastructure. Similarly, simulations strive to create positive synthetic

[4] Lin-Greenberg, Pauly & Schneider, "Wargaming for Political Science Research," p. 11.
[5] Ibid, p. 8.
[6] Bob Work and Gen. Paul Silva, "Revitalizing Wargaming is Necessary to be Prepared for Future Wars," War on the Rocks, December 8, 2015, https://warontherocks.com/2015/12/revitalizing-wargaming-is-necessary-to-be-prepared-for-future wars/.
[7] Lin-Greenberg, Pauly & Schneider, "Wargaming for Political Science Research," p. 6.
[8] Ibid, p. 8.
[9] Daniel & Musgrave, "Synthetic Experiences."

experiences that can be used to shape responses to future challenges. J. Furman Daniel III and Paul Musgrave examined the effects of synthetic experiences in international relations, finding that the fictional narratives present in popular culture and in exercises like wargames trigger cognitive processes akin to real-world decision making.[10]

How does this happen? Games activate two simultaneous cognitive processes: the automatic and systematic systems. These systems are what formulate synthetic experiences. Of the two, the automatic system will first process the information that the simulation provides to it. In a synthetic experience, the brain's automatic system will initially believe the information provided, but later discount at least some of it as fiction, before engaging any higher cognitive processes. The brain's disbelief is a major hurdle. Its suspension, in order to trigger deeper learning and more valuable synthetic experiences, is operative and paramount. Only then can the secondary process, the systematic system that allows us to make the determination between what is real and what is fiction, be fully engaged.[11]

What happens next? Peter Perla and E.D. McGrady write that "what determines the extent to which a narrative or other piece of prose invokes the systematic system and at what intensity is the extent to which we can take real action on the basis of that information."[12] Thus, a simple work of fictional prose likely won't fully engage the systematic system: It won't fully suspend disbelief due to the reader's inability to take actions. But simulations stymie disbelief because participants must act on the information they receive and process.[13] Because players occupy a role (what Perla and McGrady call dramaturgical identities) within a constructed narrative, the brain is forced to act as if it is in the real world in order to maintain the identity, further foiling disbelief.[14] Disbelief is thus challenged twice by simulations: once when players assume their roles and once again when they influence the narrative. The brain can engage the higher cognitive processes around decision-making and information analysis.

What does this mean? It means that war games may be the highest form of synthetic experience. They are able to surmount disbelief and unlock crucial cognitive processes to teach and instruct participants in a way few exercises and sources of fiction can. Information, risks, consequences, and decisions are all considered as if it is the real world. Moreover, the types of information that might traditionally trigger serious disbelief—monumental failures, public embarrassments, and black swan events—are given a receptive environment in which they can truly be considered, responded to, and learned from. Without war games, Perla and McGrady write, these events (such as a generational pandemic) can be "all too easy to dismiss."[15]

A Valens Game

Cognizant of the recipe for a truly impactful synthetic experience, Valens wargames incorporate elements and features designed to produce the same suspension of disbelief, and unlocking of crucial cognitive processes, that make wargames such a valuable tool.

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[10] Ibid.
[11] Peter P. Perla & E.D. McGrady, "Why Wargaming Works," Naval War College Review 64:3 (Summer 2011), p. 6, https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1578&context=nwc-review.
[12] Ibid.
[13] Ibid, p. 11.
[14] Ibid.

What the experts say.	What past participants of Valens games have said.
Suspend disbelief.	"The simulation was fantastic and extremely thought provoking. In terms of real-life experience this was as close as it gets." (American University, Spring 2021) "At many points it felt as though the simulation was the 'real world' and the tasks/decisions were part of legitimate jobs that we had obtained." (American University, Spring 2021) "The entire bubble that the simulation operated in was so realistic. The tweets on both side of every argument sounded like they could've been real." (Carnegie Mellon University, Spring 2021)
Immersive learning is key.	"Wonderful immersion! Things felt almost real and I appreciate all the little funny details." (Carnegie Mellon University, Spring 2021) "The news feed and briefings were super immersive and really enhanced my experience." (Carnegie Mellon University, Spring 2021) "The simulation did really well by drawing me in and getting me actually interested. I felt very engaged and was always looking forward to the next morning where I would see the press release." (Carnegie Mellon University, Spring 2021) "The best part was the environment that the simulation created. Since it felt so realistic and detailed, I think that people got really engaged, and everybody was really trying to help their team succeed." (Carnegie Mellon University, Spring 2021)
Foster interdisciplinary cooperation.	"The simulation was extremely enjoyable, and it allowed me to deeply explore complex issues through a wide variety of lenses. Working with such a diverse team as mine was, was truly a great experience." (Johns Hopkins University, Spring 2021) "Overall, this simulation was an incredible experience for me. I've always had an interest in simulations and real-world events, but as a [computer science] major, I never would've imagined that I would have an opportunity to participate in such a well thought out, realistic simulation. I thoroughly enjoyed it and loved having discussions with a diverse group of students who had different experiences in this matter." (Carnegie Mellon University, Spring 2021)

Explore real-world dilemmas.	"The simulation was extremely enjoyable, and it allowed me to deeply explore complex issues through a wide variety of lenses." (Johns Hopkins University, Spring 2021) "This experience definitely pushed me to think more deeply about the solutions and problems related to misinformation in today's context." (Duke University, Fall 2020)
Force critical decision-making.	"The simulation was a great way to learn about decision making in a short amount of time." (Duke University, Fall 2020) "I felt that there were many instances that forced us … to think dynamically about the decisions we were making." (American University, Spring 2021) "It was simply a blast! Trying to put academic inquiry into action was thought-provoking and intellectually rewarding. I'll often think of this session when considering whether a policy proposal is actually viable." (American University, Spring 2021)
Use information and media to stimulate creation of synthetic experiences.	"I love the multi-faceted environment with multiple strings to pull that triggered different events." (American University, Spring 2021) "Having designed and run simulations like these at the McChrystal Group, I greatly admired the level of detail reflected in this simulation. The injects were realistic and impactful. The videos and tweets were a terrific touch." (Duke University, Fall 2020) "The in-universe Twitter feed made me feel almost as confused and annoyed as real Twitter." (Carnegie Mellon University, Spring 2021) "I personally found the production values excellent: so much effort was put into authoring tweets in character, representing the modern information space as a mishmash of traditional news media and social media. The extra effort with the videos was a cherry on top." (American University, Spring 2021)
Embrace dramaturgical identities.	"I think that it was strong in enabling individuals to really get into their roles and had a compelling plot that had realistic stakes." (American University, Spring 2021)

Valens Wargames as a Differentiator

Valens simulations routinely stand out as among the best available. Most importantly, they add value. Their combination of depth and breadth allow for the consistent generation of impactful synthetic experiences among participants. Past participants, from undergraduate students to national-security professionals, offered these words about the impact of a Valens game.

- "Best inter-agency training I have had in the 10 years I have worked with the U.S. Government." (American University, Spring 2021)
- "Best wargame experience I've been a part of during my career." (Foundation for Defense of Democracies, Fall 2020)
- "I really admire the way the game designers and referees provided maximum flexibility to the players' actions. In comparison, Professional Military Wargames (and hobbyist tabletop games as well) tend to have tight rules that focus attention on tactics and implementation of strategy rather than crafting strategy itself. By adopting an almost Role-playing Game style, the play was centered on creatively building strategies and high-level dialogues around policy. This made it a truly unique and exceptional experience!" (Carnegie Mellon University, Spring 2021)
- "I learned more during this simulation than I have in any other class." (American University, Spring 2021)