The Utility of Narrative Matrix Games—A Baltic Example

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The long contribution of war gaming to military training, operational analysis, and military planning has been well documented by numerous authors. War games have been used for many purposes, and there are numerous different methods and types from which to choose, depending on the stakeholders’ aims. For example, war colleges have used war games as an integrated part of their curricula as part of the experiential learning cycle. The Pentagon wargames to develop and test new doctrine and war plans. Think tanks have used war games to generate new insights. The respective interests of these different users of war games determine the focus of their gaming efforts.

The focus of professional gaming has shifted over time from the kinetic so as to include wider aspects of confrontations beyond war fighting, such as national will, social media, economics, and the laws of war. Traditional wargame models have struggled to represent these factors adequately. Developed from the hobby-war-game space, the matrix game narrative wargame method has been discussed widely in the wargaming community of practice and the method is now in general use. It is timely and valuable for the wider professional community to apply some scrutiny to both the worth of the method and its challenges. This article traces the origin of the method, briefly explains how it works, then uses a case study of a game based on a confrontation short of war in the Baltic to highlight some challenges with the method. The article concludes with an assessment of the utility of the matrix game method for gaming current political crises.
THE LONG ROAD TO NARRATIVE GAMING

War Gaming’s Infancy

War gaming first became embedded in military training with the Prussian kriegsspiel of the nineteenth century. These training games usually emphasized the operational movement and combat aspects of warfare rather than the political aspects of confrontations. These early war games could be seen as an engaging tool for communicating the combat experience of veterans to the next generation of soldiers. The games supplemented traditional teaching methods of lectures, reading, staff problems, field exercises, and so on. Junior leaders would make decisions within these games and then the umpires, who were veterans, would intervene with reflections based on their actual combat experiences in similar situations. The increasingly detailed kriegsspiel rule books attempted to codify the experience of such veterans so that the games could run in a realistic manner even in the absence of veterans as umpires.4

The Prussian war games clearly were popular in the late nineteenth century, as shown by their dissemination internationally. For example, members of the British Volunteer movement (part-time reservists) played these games on their own time.5 The games were effective at teaching a number of military skills, such

FIGURE 1
EXAMPLE OF KRIEGSSPIEL IN ACTION IN 1915

The 25th London Cyclist Regiment playing a kriegsspiel variant, “Bellum,” at their London regimental headquarters. Traditional kriegsspiel had opposing teams in different rooms looking at their own maps. The umpires would tell the players in each room what they could see. Bellum kept the players in one room and used a simple screen between the two forces to conceal movement until the main battle commenced. The rules were also simplified so a game could be completed in a single training evening.

Source: Reproduced from Curry, The British Kriegsspiel (1872) Including RUSI’s Polemos (1888).
as the delivery of orders, combat appreciations, map reading (the games used actual military maps), and tactical decision-making. However, the key weakness of these games was that if too many rules were introduced (so as to include as much of the detail of real combat operations as possible) the pace of the games slowed down, making them less engaging and reducing the chance to practice other military skills.6

Naval War Gaming

Royal Navy officers pioneered the adaptation of the concept of kriegsspiel to naval warfare. John Fredrick Thomas “Fred T.” Jane was the best-known “father” of naval war gaming, but his war game actually rested on foundations built by the professional naval officers of the time. At the Royal United Services Institute (RUSI) in 1873, Lieutenant W. M. F. Castle, Royal Navy (RN), presented The Game of Naval Tactics and the chair of the session, Admiral Sir Frederick W. E. Nicolson, 10th Baronet, CB, prophetically said, “I cannot help feeling that, at present, we are only on the threshold of a very difficult and complicated question, which may, in the end, be extremely useful to the Naval Service in general.”7 A few years later, in 1879, Captain Philip H. Colomb, RN, presented The Duel: A Naval Wargame at RUSI; then in 1888 Lieutenant H. Chamberlain, RN, demonstrated his Game of Naval Blockade at a RUSI evening session. Minutes of these meetings show that the audience of professional naval officers and academics examined the merits of these war games vigorously.8 In many ways, these early discussions of professional war games were exemplars of good practice; they assessed each game on its merits, applying such questions as “Is this game realistic?,” “Does it teach the correct lessons?,” and “Is it a cost-effective use of officers’ time?”

Fred Jane published his wargame rules in 1898 and the classic Jane’s Fighting Ships series of books was the world’s first wargaming supplement.9 The books classified ships using the naval wargame armor-classification system. The rules were sufficiently realistic to gain professional credibility and the British and other navies used them widely. They were useful for developing an understanding of naval tactics, in particular what happened when ships of the line closed for a sea battle. The war games taught other lessons; the model ships used helped to develop ship-recognition skills, and playing the game helped teach participants the speeds, ranges, armors, penetration ranges, and the like of those ships.10 In the interwar years 1919–38, there was a general acceptance of war games as part of a naval officer’s mental equipment.11 The Naval War College’s war games’ impact on World War II combat is documented particularly well.12

The vast majority of these early professional war games dealt with low-level tactical warfare, typically focusing on the details of various weapons and their effects. Yet interestingly, some of these tactical games had important strategic
effects. One of the classic examples was the Western Approaches Tactical Game that Captain Gilbert Roberts, RN, ran in 1942–45. The game trained convoy and escort ship commanders in anti-U-boat tactics for the critical convoy battles in the Atlantic during World War II. Later commentary on these games presents them as a single game, but Roberts actually ran three types of games. The first was for operational analysis—reenacting, on the floor, recent U-boat attacks on convoys. Relying on the after-action accounts of the escorts, Roberts and his team worked out where the attacking U-boats could have been and then statistically worked out the best tactic to maximize the chance of catching the attacking U-boat. The second type of game was training—teaching escort commanders of various nationalities to apply these new tactics. The third type of game was strategic—a map game mimicking the actual Battle of the Atlantic, with the aim of establishing whether rushing escort groups (naval support groups) to support convoys under attack actually would work (it did).
Post–World War II Tactical Gaming

At the start of the Cold War in 1945, a succession of manual, then computer-based, war games focused on training or developing better war-fighting strategies. Many of the American games looked at a potential war between NATO and the Warsaw Pact in central Europe. Dunn Kempf (1977–97) was a game that used 1:300-scale miniatures and had been developed from a hobby set of rules. Units were expected to make terrain boards that looked like their training or deployment areas. Units could make a plan, play the war game according to their plan, modify it, and then deploy into the field to exercise over the very terrain over which they had gamed.

Tacspiel (1966) is an example of tactical war games that were used for operational analysis during the Vietnam War. It played an important role in improving the effectiveness of U.S. Army counterinsurgency techniques. The Tacspiel
“games” typically took two days to play just thirty minutes of simulated combat. The analysts would examine a situation such as an American infantry company being ambushed, then look at all the evidence to identify the best response. This response then informed subsequent training and doctrine.¹⁹

**The Introduction of Game Theory**

Along with the various tactical games, there were developments into the new area of political-military (pol-mil) gaming. In the 1940s, John von Neumann and Oskar Morgenstern developed game theory to model mathematically the interactions among rational actors regarding economic matters; it was later adopted in other decision-making environments, such as pol-mil gaming.²⁰

For example, the advent of the atomic bomb in 1945 changed the nature of warfare radically. No longer could war be assumed to be a zero-sum game, in which the person with the highest score wins, such that the loss of a “chess piece” by one side necessarily would represent an equal and opposite gain to the other.²¹ In chess, the aim is to win by achieving checkmate, regardless of how many pieces are lost in the process. Victory in chess is irrespective of the “casualty rate” among the pieces. In contrast, the major goal for each power bloc during the Cold War (1945–91) was to attempt to achieve as many political objectives as possible—but not at *any* cost. Both sides wished to avoid a nuclear exchange that threatened devastation far worse than any possible political advantage that could accrue. Here was a situation in which both sides could lose horrifically but could win only relatively marginally. Understanding such a situation required a new theory.

Game theory in its simplest form can be applied to a situation in which each of the players selects a strategy from a limited number of predefined options. Each option has been quantified as having a positive, negative, or zero score. Game theory teaches that a player must adopt the strategy that best maximizes his assured score, regardless of the other player’s actions. Game theory was the basis for extensive theoretical work and dominated academic thought on conflict throughout the Cold War.²²

**Gaming Political Confrontations**

Some authorities considered game theory to be unsuitable for gaming pol-mil confrontations, particularly given the short time before a confrontation turned into all-out war. The American government’s answer in the 1950s was mainly to run strategic war games through the Joint War Games Agency of the Joint Chiefs of Staff. The agency was divided into three parts: the General War Division, which conducted annual games about World War III; the Limited War Division, which continually tested contingency plans for smaller conflicts, such as in the Middle East or Korea; and the Cold War Division, which was concerned with modeling high-level crises rather than actual hostilities.²³
Andrew Wilson outlined the standard methods of producing crisis games in America during the 1960s. A team of subject-matter experts (SMEs), including diplomats, created a fact book covering the combat potential of the forces involved and the relevant geography, as well as other resources. On the basis of these sources, the scenario was generated and the game prepared.24

Such games normally involved a committee of five to ten players representing each country. The teams did not represent individuals, so there was no role-playing of individual positions, such as head of state. Each committee collectively made decisions in the best interests of the country it was representing. The American teams were expected to pursue whatever policies best helped the United States pursue its national interest, but other teams were expected to act in a way that reflected the U.S. interpretation of the national interest or ideologies of the countries they were playing.25

Over the course of three days, the committees spent four hours discussing the options, then outlined to the game director their plans for the next two to seven days of game time. The game director, using his own experience and advice from specialists, then arbitrated the outcomes of the different plans.

Such games were criticized for a lack of focus. Was the objective to practice the procedures? To test the effectiveness of different force mixes? To serve as a creativity exercise that looked at outliers? To forecast future outcomes? Or to develop optimal political strategies? Such committee games also tended to produce nonreplicable results, as the actual process by which decisions were made was difficult to record and the group dynamics within each committee were impossible to model.

These games also have been criticized for allowing too much scope for unorthodox behavior—players would become bored and do things merely out of curiosity, just to see what would happen.26 A structure was needed that would produce more-plausible behavior in games, but also would allow political and other factors to be integrated into the games. In addition, a new type of game was needed that could be developed faster, was flexible enough to game whatever subject needed exploring, and could be run within a relatively short span of time.

During the 1970s and ’80s, the wargaming hobby industry, in particular through the board game company Simulations Publications Inc. (SPI) and its magazine Strategy & Tactics, pioneered innovation in political gaming.27 Early examples included the following:

- The Plot to Assassinate Hitler (1976) attempted to game the preparation for and staging of a coup in Nazi Germany during World War II.28
- Canadian “Civil War” (1977) modeled attitudes toward separatism versus federalism during a time of political conflict in Canada.29
• After the Holocaust (1977) was largely an economic game about reconstruction following a strategic nuclear war.30

Many ideas developed subsequently became widely adopted to represent political issues in gaming.31 However, one generic wargame methodology made the leap from the hobby to the professional communities.

MATRIX GAMES
Matrix game methodology was created in the United States by Chris Engle and was first published in 1992.32 Engle aimed to create a system by which it was possible for a player to role-play at any level, representing anything from a single person to an entire country. Subsequently the method was developed extensively and play tested in a variety of professional military educational contexts over the next fifteen years. By now matrix games have been used for professional military education in the United Kingdom, including to study current conflicts, such as those in Syria, Libya, and Iraq, as well as hypothetical conflicts in such hot spots as the South China Sea and the Korean Peninsula.33 Those working in intelligence also have used them.34

Matrix games exist in the space between rules-based war games and online role-playing games. Many of the existing rules-based games take considerable time and effort to explain to those from a nonwargaming background. Rather than attempting to come up with rules to cover all possible actions, the matrix games are very light on rules. Players state what they want to do and what the impact of this would be, and give reasons supporting why their efforts would succeed. Other players then are allowed to suggest factors that would increase or decrease the chance of success. On this basis, the umpire normally assigns a probability to the chance of success of the players’ actions. This method encourages creative thinking but has a structure that uses the experiences of the group to help moderate the suggestions. Having a team represent and role-play each actor in

EXAMPLE OF A MATRIX GAME ARGUMENT
Player A: “I will reassure the Baltic States of support by harassing enemy submarines in the Baltic Sea. I am able to do this because:

- I have three frigates deployed and available.
- The captains and crews are highly experienced in antisubmarine warfare.
- Electronic intelligence reveals the enemy deployment patterns.
- The weather is fine, so they can work uninterrupted.”

Player B: “But overt trailing guarantees that the submarines will detect the frigates and will take active counterdetection actions.”

Umpire: “I assess the balance of these arguments and I assign the following probability of success that Player A has to achieve to obtain the desired outcome.”

The game world then moves on from that point and the next player proposes an action.
the game helps encourage analytical discussion; for each turn, the team is given a short time to agree on a course of action.

One of the strengths of matrix games is the ability to integrate pol-mil actions within a single game. Since players can make arguments about whether another player’s proposed actions would succeed, the game had some elements of both competition and cooperation. This method allows a situation to be explored quickly without the constraint of cumbersome game mechanics. Game designers developed many variations of matrix games, customizing them to their purposes.35

**MATRIX GAME CASE STUDY: POSTURING IN THE BALTIC SEA**
The scenario that follows was developed at the Military Operations Research Society (MORS) Emerging Techniques Special Meeting (METSM) in October 2016.36 The intention of the effort was to examine the utility of matrix games for gaming an event of current interest. This formed part of MORS’s wider efforts to investigate the validity of professional war gaming.

The scenario subsequently has been played multiple times with different audiences, including members of the military, academics with relevant specialties, and wargaming hobbyists.37 Those in the last-named audience, if they are experienced in playing modern pol-mil games, can add value, as they sometimes think outside the box and propose original strategies that provide new insights.

**Background to Tensions in the Baltic**
While the United States often focuses on issues of sea power in the Pacific, the European countries of NATO focus more on the issues of the Baltic States and the threat from Russia. Russia’s agenda is to secure its place as a world power, and as such to be entitled to its own sphere of influence and the right to maintain buffer regions as part of its strategic defensive doctrine. Such a buffer would include adjacent states. Recent history demonstrates that Russia has the willingness and the ability to use military force, or the threat of it, to achieve its political objectives, such as in Chechnya (1999–2009), Georgia (2008–14), and Ukraine (2014–present). Hence, the Baltic States of Latvia, Estonia, and Lithuania see themselves as being on the front line.38 To secure the republics, it is NATO policy to rely on the deterrent effect of trip-wire-size NATO forces that could be reinforced rapidly in the event of a crisis.

The region has the added complexity of the presence of the Russian exclave of Kaliningrad. Königsberg was an ancient medieval town and was the old capital of Prussia. At the end of World War II, Russia occupied the town and the local German inhabitants fled, were killed, or were expelled forcibly. The town was renamed Kaliningrad and became the year-round ice-free European port for the Russian Baltic Sea Fleet. Approximately four hundred thousand Russians live in
the area, largely providing the workforce to support the Baltic Sea Fleet and the two naval air bases. The area has staggering pollution problems, including by nuclear waste. Geopolitically, Kaliningrad is cut off from the rest of Russia by Lithuania and Poland, which are members of NATO. The strategic importance of the existence of the exclave is that the Baltic States are linked to Poland and the rest of NATO only by a sixty-five-kilometer land corridor to Lithuania.

**The Scenario**

One of the keys to a successful game is constructing an immersive narrative for the scenario.\(^3^9\) The starting point of the Baltic Challenge scenario is as follows: Russia has deployed nuclear-capable Iskander-M short-range ballistic missiles to its Kaliningrad exclave. The Iskander missile is dual capable—able to carry a conventional warhead or a nuclear one. But development and deployment of such a missile constitute a breach of the Cold War-era Intermediate-Range Nuclear Forces Treaty of 1987.\(^4^0\) The missile’s range, perhaps six hundred kilometers, makes all the Baltic States and two-thirds of Poland potential targets. The missile
is mobile and, despite the huge size of its launcher, hard to detect. Finally, the missile’s mobility, combined with the short elapsed time from order to launch and the fast flight time, means that Russia has a first-strike nuclear capability in the region. It is unlikely that a target state would receive any warning of an attack before the first missiles exploded.

For the purposes of the scenario, the Baltic States are alarmed and they ask NATO for assistance. This raises tensions within NATO.

The expectation in the game is that the conflict will remain below the threshold of a general war. However, miscalculation, perhaps by a third party, could bring the situation to the brink of a shooting war.

**The Play**

Players are told that the game outcomes will be reported only under the Chatham House Rule, under which the contribution of individuals may not be attributed.\(^{41}\) Removing any concerns about postgame reporting is important; it helps remove organizational constraints that might discourage players from experimenting.

The players read their briefing handouts, which include a strategic overview of the initial situation and personalized aims and objectives. Sometimes after discussion (at least two people represent each faction) the players suggest revising the objectives. Any such revision is done in collaboration with the umpire, to prevent players from inadvertently “breaking the game.”\(^{42}\) The dynamic of introducing more players into each role is a useful one, but it needs strong moderation to keep up the game’s momentum.

The game proceeds with each team making an argument, starting with the faction deemed to have the initiative. The amount of time that each turn represents remains abstract, but players in this game generally understand it to be a few weeks. As the game progresses, the role of chance means that the game does not proceed necessarily in the most likely direction but rather generates a potential future scenario. Conflict incorporates a degree of chance by its very nature, and the game reflects this. In one case a team argued that an operator on the other side fired a surface-to-air missile without authorization, but it missed. The outcome of such arguments usually changes the future direction of the game. The matrix game narrative methodology promotes the creation of plausible actions within the structure of the scenarios.

**Postgame Discussion—the Hot Washup**

The academic evidence is clear that a major part of the value of serious games is in a well-conducted after-action review. Games can be viewed as a prelude aimed at stimulating high engagement and valuable focused discussion.\(^{43}\)

An issue with an unclassified game is that it may produce outputs that could be considered of value to decision makers (on either side). If players, through
the focused lens of the game, identify actual weaknesses or develop successful strategies (for either side), the game outputs should be considered confidential and their dissemination controlled. However, excluding from pol-mil games those who do not hold the appropriate security clearance restricts the intellectual power that can be brought to the exercise. An example might be academics who possess specific foreign policy knowledge.

After game play concludes there is an hour-long discussion among the players and the umpire about the realism of the scenario and the actions taken in the game, including a postmortem of player actions. The umpire provides only minimal moderation; the players take turns posing questions to one another and questioning individual moves.

The purpose of playing the game is to create a realistic representation of a live potential crisis and to react as the stakeholders would in the real world. Players with relevant experience of such confrontations note that the game includes many activities reminiscent of the real world. For example, it might be seen as a rational player strategy to focus on achieving only a few aims, but the NATO team actions always consist of hopping from crisis to crisis.

One recognition—which arose from all iterations of the game and with all types of players—was that the majority of NATO doctrine and foreign policy work was somewhat lacking when dealing with the “gray zone” that falls between a situation constituting normal deterrence and a situation that reaches to article 5 of the Washington (NATO) Treaty (invoking collective defense—an attack on one is considered an attack on all). This has led to a dawning of understanding that the NATO players often are unsure of what they should be doing and how the opposition will interpret their actions. Of course, one must be careful of making generalizations on the basis of anecdotal evidence, even from multiple game iterations; there certainly are policy makers in NATO who can deal with these issues. But the evidence from these games indicates that these experts’ understanding has not filtered down to those at the operational level.

Recently, some senior Western politicians have made comments along the line of “Treaties should not be straitjackets” and “Are we really considering going to war over a country with a population equivalent to two [U.K.] municipal boroughs?” Such comments have worried many professionals who had assumed that the Cold War certainties with regard to Russia still held firm. This particular uncertainty, coupled with the larger, manifest uncertainty about the actions the United States might take, has led to a number of iterations of the game by professionals that mirrored the sort of radical alternative futures that recreational players have proposed.

The game has proved to be an extremely good way of ensuring that all concerned develop a deeper understanding of the situation. Prior to the series of
games being played, one senior person (whose professional focus was not the Baltic States) looked at the proposed map for the first game and asked why some counters on the map showed the proportion of ethnic Russians in particular areas. This person then pointed to Kaliningrad and asked why so many Russians were living there—obviously completely unaware that Kaliningrad was part of Russia. Following the game, many of the participants remarked on aspects of the situation about which they were uninformed, despite intelligence briefings being disseminated on a regular basis. Games are effective devices for contributing to the learning process.

Another aspect of the situation was the vexed question of antiaccess/area-denial (A2/AD) measures—powerful Russian weapon systems that threaten to deny easy access to the restricted waters of the Baltic. This subject has been written about extensively; but the game, operating in the gray zone, demonstrates that much of the rhetoric on the subject is flawed. As a player in one iteration of the game summarized, “A2/AD is a product of the imagination. We move into theater, and either they shoot us or they don’t. If they shoot, we are in an Article 5 situation and we all know what to do; if they don’t, we just carry on. A2/AD doesn’t exist outside a shooting war.”

EMERGING THEMES FROM A GAME BASED IN NARRATIVE METHODOLOGY

*Flexibility*

Over many iterations of the Baltic Challenge game, the inherent focus on the narrative rather than the mechanics of war has led to the game play unfolding in a variety of ways.

- Realism was exhibited not only in the overall design of the scenarios but in how the players responded to the various crises. The reasoning exhibited within the matrix game was natural in human terms, with models of negotiation focusing on the same type of variables that real-world decision makers would consider important in the crises and conflicts being simulated.

- Transparency of the game mechanics led to the logic of the game being understandable and humanlike in terms of the decision process and individual judgments.

- The narrative of the game allowed flexibility, with the overall conflict serving as a framework for a diversity of contexts representing alternative solutions to the conflict. It was possible to reflect diversity in larger strategies, value systems, perceptions, and competence.
• There is an evolutionary potential to the narrative structure, using the initial setup as a highly simplified baseline for constructing more-sophisticated interactions.

• The ease of use designed into the game mechanics ensured that it was possible to review and adapt the game play without being proficient in specific modeling, programming, or game-design disciplines.

**Umpiring Challenges**

Two umpiring challenges need further exploration. They involve the trade-offs involved in deciding whether to (1) keep a game on narrative track or let the narrative emerge organically, and (2) drive the game to a satisfactory narrative conclusion or encourage analytical discussion.

**Player Inventiveness.** The first challenge involves the need in matrix games to moderate player inventiveness. The essential trade-off is between allowing players to discover unconventional strategies that constitute so-called black swans and letting players explore the most likely options for each role. An example was the range of alternatives that the members of a Russian team explored for achieving their strategic direction of creating internal dissent within the Baltic States. At one end of the spectrum was the realistic, incremental approach: building up discontent over months with a carefully crafted social media campaign. But at the other end of the spectrum was the unlikely, but still feasible, idea of carrying out a surge, perhaps by disguising intelligence agents as tourists. In matrix game terms, an argument to achieve this would have needed a high score to succeed but would fall within the bounds of military possibility. However, such a success would alter the course of the rest of the game, with Russia having a strong body of controlled activists in the republics at the end of turn 1 instead of a number of turns later. If the game space is visualized as an ever-expanding branching tree network, occasional choices with a low chance of success can move the game state onto an entirely different branch.

When game play begins within a set construct, a series of tasks is assigned to each team and the members embody their roles within the session. To this point, the umpire retains control over the emerging story line, introducing new tracks as needed when situations arise. Conflict begins to occur when the narrative becomes a question of experience and opportunity, as occurred in the example above. When players of the Baltic Challenge game have had experience in war, politics, and government their experience skews the narrative, altering the nature of the game play in subtle and not-so-subtle ways.

Uneven teams provide an example. A team usually consists of two or three people, who may or may not have similar backgrounds. When the team has
representation from people of different expertise levels and dissimilar backgrounds, the actions it takes tend to alter the nature of the narrative in big leaps rather than the small steps through which people with equal expertise would progress. In one instance, one team’s members argued that they would assert political control in a city in just one turn, whereas those with more experience in such matters countered with the suggestion that it would take multiple actions to achieve this outcome. Inexperience can underestimate the time and effort required to effect change in the real world. This led to the narrative refocusing the discussion as a means to explain game play rather than to move the scenario forward. In this instance the umpire had to intervene for the game to progress.

Alternatively, the umpire can create a narrative that is too constrained, whereupon the game begins to break owing to a lack of player choice. For example, if the Russian player moves forces into a blockade position, NATO either must force the blockade and go to war or must concede defeat. If the teams in the conflict lack the means to create new actions, they are forced to rely on the umpire to introduce a new scenario that allows the teams to take action.

In sum, a balance needs to be struck between the organic growth of the game narrative and the immediacy of creating a playable game scenario in a realistic conflict.

**Conclusion versus Discussion.** The second challenge is deciding whether to drive the game to a satisfactory narrative conclusion or encourage analytical discussion. After players receive their initial briefings, the members of each team retire to a separate space to attempt to coalesce their understanding within the team and to speculate on the content of the other teams’ briefings. In one instance, a team even started to map out the most likely path the game would follow by verbalizing a sort of miniature matrix game. One game-management question is how long to allow this focused consideration of the situation to continue before bringing the teams back to the main event. By allowing the teams to confer beforehand the umpire creates space for dialogue not available during the actual game play; however, interchanges that include SMEs discussing ongoing real-world confrontations move from one topic to another, which may result in individual teams creating entire scenarios prior to the actual game play.

A review of the scenario is necessary when starting the game, but it can lead merely to more analytical discussion rather than to actually commencing the exercise. The game does not depend on the map being an exact representation of the daily movement of forces, but players who represent experts in the field want to ensure the authenticity of the experience by starting the game from the actual situation at the present time. When the game commences, engaged players
inevitably take the opportunity to question forces, geography, culture, and other salient factors. The umpire then has to judge at what point to intervene by moving the game narrative on and when to let the discussion continue because it is generating new and potentially useful insights. The narrative of a matrix game evolves constantly, and each scenario posed increases the number of actions the teams can take.

That is, unless a situation develops that brings a halt to most decision processes. In one Baltic Challenge game, the conflict situation developed until it became clear that there would be a major pause in the tempo of operations. Political options had been expended and some player teams were running out of ideas. An indication of this in some matrix games is when most teams are arguing for quite modest developments in their favor. An example of this would be the Nordic team having its civilian politicians carry out a political minitour to boost urban support for the government coalition. Such an action might be worth doing, but it is unlikely to move the narrative forward significantly. In such situations the umpire faces a choice: to halt the game and move into the hot washup / after-action review phase or to wait and see whether the pressure of inactivity will spur on a team’s creativity, leading to an unexpected strategic innovation that returns the game to a dynamic state.

Game play in matrix games requires a balance between analysis and narrative. The realistic nature of the Baltic Challenge, combined with the expertise players bring to the game, creates an atmosphere that spurs analysis of the situation more than action. This ongoing analysis makes it difficult to move the narrative forward. Teams often spend a large amount of time debating small actions, and the narrative stalls. While this may mirror the current situation in the Baltic, the purpose of the exercise is to game the situation realistically but at a quicker pace. One of the umpire’s greatest powers is the ability to end the game and move on to the hot washup. This option has to be wielded carefully, because calling a halt to all actions and declaring the situation complete concludes the narrative abruptly.

THE UTILITY OF NARRATIVE MATRIX GAMES FOR GAMING CURRENT POLITICAL CRISES

Matrix games serve an important role in gaming current and potential crises. By creating a space where key stakeholders can manage specific situations involved in controlling and predicting scenarios, there is room to learn about the thinking and maneuvering behind current world events.

While the matrix game methodology employs narrative to strengthen the game play, it also assumes a certain level of expertise in the subject being gamed. Preparing a primer pack before the game is essential, and the effort involved in creating such a succinct summary can be a useful analytical exercise in itself. Further, it
is clear that issuing players a pregame narrative of background information helps provide the foundations onto which game play can be introduced. Players are not simply set to work on some prescribed aims and objectives; they possess a cultural overview that helps provide the basis for actions within the game.

However, it should be noted that there is some academic evidence to suggest that players from different cultures play in different ways. For example, Chinese players, and by implication Chinese decision makers, typically act in a more co-operative way than their American equivalents. This implies that simply handing players a brief may be insufficient to replicate accurately the mind-set of those they are playing. Player recruitment may change game outputs, and each game's lessons may be different depending on player backgrounds, even using the same scenario and ground rules.

Earlier players also noted the need for a practice session to allow those unfamiliar with the technique to practice the game methods, so this has been incorporated. Once everyone is familiar with the game methodology, the game clock is reset and the game itself commences.

Scenario design is critical, particularly with regard to the visualization, as represented by the maps and counters available at the start of the game. For example, adding refugee counters gives the game a more humanitarian focus, whereas introducing large numbers of military units tends to encourage the players to focus their play more on the kinetic aspects of the confrontation. In the Baltic Challenge game, Finland is only partially presented, as simply an area on the map, which limits the potential for players to conduct detailed play in the country. However, if the game starts to focus on Finland the inherent flexibility of the matrix game method allows the umpire to generate an inset sketch map of Finland on demand, thereby allowing the direction of the game to continue.

Certain types of scenario are more suited to matrix games than others. Would gaming a natural catastrophe work as well as gaming a counterinsurgency situation? Experience from the recreational use of matrix games seems to indicate that multisided games are more suitable than two-sided situations; the narrative of multisided games allows multiple stories to develop around the actions of the game. However, some apparently two-sided games might include multiple stakeholders who are notionally on the same side but hold slightly different judgments about the value of certain aims and objectives.

The matrix game narrative methodology may prove to be a useful tool for examining complex scenario dynamics, in which strategies are not initially apparent and the interplay of divergent multiple actors cannot be predetermined or reasoned out even with careful examination of the situation. Like all war games, a matrix game cannot predict the future, but it can lay out a narrative for a particular future scenario. Conducting multiple replays can generate more scenarios.
However, it is clear that there are steps that can be taken to improve the potential utility of the method. Having an SME who is not participating in the game but who evaluates the plausibility of the options proposed in the game is important. Separating such SMEs from the efforts of any particular team helps to keep their judgments professional and objective, which can confer greater credibility on game outcomes.

Careful scenario design, with a clear idea of the purpose of a matrix game and the areas that the umpire wishes to explore, is critical. The game can be designed and used in the educational space, as a way of conveying to those less familiar with the topic essential truths about geography, stakeholders, and potential strategies. However, matrix games also can be used to identify and analyze previously unanticipated potential future paths. The dynamic nature of these games seems to encourage the generation of unexpected insights. If analysts want to identify the most likely developments in a crisis, these can be reasoned out in a structured discussion; but if they want to explore other potential narrative routes, then a well-managed matrix game can be a useful tool.

NOTES
2. Kolb’s experiential learning cycle theory holds that learners are taught something new, they reflect on it, they develop their understanding, and then they experiment with it to test their new understanding. David Kolb, Experiential Learning: Experience as the Source of Learning and Development (Upper Saddle River, NJ: Prentice Hall, 1983). The use of war gaming as the vehicle for experimentation allows learners to go around this cycle a number of times to develop a deeper understanding.
6. The reaction to the drive to complexity was the so-called free kriegsspiel movement. These games used minimal rules (rather than no rules, as often stated), with guidance on movement, timings, and combat odds required for success. See the 1896 British War Office’s rules in John Curry, Verdy’s Free
Kriegspiel Including the Victorian Army’s
1896 War Game, Recreational Wargaming—
Early Wargames (Morrisville, NC: History of
Wargaming Project, 2008).

7. For a discussion of the development of early
naval war gaming, see John Curry, ed., Over
Open Sights: Early Naval Wargaming Rules
1873–1904, Recreational Wargaming—Early
Wargames 6 (Morrisville, NC: History of
Wargaming Project, 2014).

8. Ibid. Actually, some of the discussion would
have been considered rude for the era of the
Victorian gentleman, but the admiral, by con-
tinuing to chair the sessions, highlighted the
potential utility of such games for training.

9. Fred Jane’s rules went through a series of up-
dates as naval technology developed. For the
1906 version of the rules, see John Curry,
ed., The Fred Jane Naval War Game (1906),
Including the Royal Navy’s Wargaming Rules
(1921), Recreational Wargaming—Naval
Wargaming (Morrisville, NC: History of
Wargaming Project, 2008). The rules were
at the back of Fred T. Jane, All the World’s
Fighting Ships (Boston: Little, Brown, 1898).

10. The stylized ship models emphasized
silhouette features that were key to
recognition.

11. Richard Brooks, Fred T. Jane: An Eccentric
Visionary (Portsmouth, U.K.: Jane’s Informa-
tion Group, 1997).

and U.S. Navy Preparations for World War II
(Lincoln, NE: Potomac Books, 2016); James
A. Miller [Lt. Cmdr., USN], Gaming the
Interwar: How Naval War College Wargames
Tilted the Playing Field for the U.S. Navy
during World War II; Molding Mahan, War Plan
Orange, Fleet Problems, Feedback, Solomon,
Peleliu, Samar (Fort Leavenworth, KS: U.S.
Army Command and General Staff College,
2017). For an alternative view that states that
the wargame rules included major misun-
derstandings but were still very useful, see
John Curry and Chris Carlson, The United
States War College 1936 Naval Wargame
Rules: USN Wargaming before WWII, Recre-
tional Wargaming—Naval Wargaming
1 (Morrisville, NC: History of Wargaming
Project, 2019).

13. See Mark Williams, Captain Gilbert Roberts,
R.N., and the Anti-U-boat School (London:
Cassell, 1979) for a personalized account of
these games.

War: Captain Gilbert Roberts and the Wrens of
the Western Approaches Tactical Unit”
(paper for the Military Operations Research
Society [MORS] Emerging Techniques
Special Meeting, “Validity and Utility of
Wargaming,” Working Group 2, Alexandria,
VA, October 2017).

15. That is, within a few days of the actual
attacks.

16. Curry, Peter Perla’s The Art of Wargaming;
Allen, War Games.

17. Carroll Hilton Dunn Jr. [Capt., USA] and
Steve Kempf [Capt., USAF], Battle Guide to
Simulation: USA Army Training War Game
Rules 1977–1997, ed. John Curry, Profes-
sional Wargaming (Morrisville, NC: History
of Wargaming Project, 2011).

18. Tacs spiel has been republished as John
Curry, ed., Tacs piel: The Counterinsurgency
Wargame of the American Army 1966,
Professional Wargaming (Morrisville, NC:
History of Wargaming Project, 2010).

19. Allen, War Games; Curry, Tacs piel.

20. John von Neumann and Oskar Morgenstern,
Theory of Games and Economic Behavior

21. Chess generally is considered to be a zero-
sum game, but not all chess games are. For
example, players may consider a draw to be
as bad an outcome as losing.

22. Roger B. Myerson, Game Theory: Analysis
of Conflict (Cambridge, MA: Harvard Univ.

23. Andrew Wilson, The Bomb and the Com-
puter: A Crucial History of War Games

24. Ibid.

25. Ibid.

Gaming,” Naval War College Review 59, no.

27. The successor to SPI is Decision Games,
decisiongames.com/. The company
produces three regular magazines with
games, including one focusing on modern
warfare.
28. BoardGameGeek has various photos of the playing area, counter sheets, etc. BGG, boardgamegeek.com/.
29. BoardGameGeek has a description of the game mechanics. BGG, boardgamegeek.com/.
30. BoardGameGeek has a description and photos. BGG, boardgamegeek.com/.
31. For example, “political will tracks” summarize national will on an arbitrary scale, with a higher number representing strong national attitudes of support for the conflict. Actions in the war game such as success or failure increase or decrease the national will.
37. The game was played multiple times at MORS in 2016, then at the Defence Academy of the United Kingdom in 2017 and on three other occasions in the United Kingdom.
42. One example: One team’s members decided to explore an alternative future by postulating that they would not pursue their cultural objectives. But while this might have been interesting, it would have led to the game ending prematurely and in confusion, as the other players would not have had a chance to explore their sides’ aims and objectives through game play.
43. David Crookall, “Serious Games, Debriefing, and Simulation/Gaming as a Discipline,” Simulation & Gaming 41, no. 6 (December 2010) is still the best summary of the importance of after-action reviews.
47. A black swan is an event or occurrence that deviates significantly from what is normally expected in a situation. Black swan events typically are random, unexpected, and extremely difficult to predict.