Security Nexus Perspectives

SENIOR LEADERS WARGAME INSIGHTS INTO THE U.S. - NORTH KOREA NUCLEAR STANDOFF

By Deon Canyon,[1] Jonathan Cham,[2] Jim Potenza[3]

Introduction

On July 28, 2017, the Democratic People's Republic of Korea (DPRK) tested an intercontinental ballistic missile (ICBM) that experts asserted could threaten the mainland United States (Sanger, et al., 2017). This event triggered major shifts in US-DPRK relations. Within an eleven-month period, the two parties moved from threatening kinetic strikes on the other to participating in an unprecedented meeting between the two heads of state. In retrospect, it is easy to place these events within the broader context of US-DPRK relations. However, for decision-makers facing down that pivotal moment, the future seemed anything but certain. It is within this historic context that the Daniel K. Inouye Asia-Pacific Center for Security Studies (DKI-APCSS) ran five iterations of its DPRK Matrix Game for senior leaders.

All decision makers face conditions of imperfect information that limit their capacity for fully rational decisions. Upon recognizing the presence of potentially significant unassessed risk, decision-makers attempt to expand the boundaries of the known-knowns by disclosing sensitive or even confidential information, soliciting group feedback, seeking perspectives from multidisciplinary stakeholders, hiring creative thinkers and directly investigating the unknown (Luft & Ingham 1955). Wargaming often combines all these elements.

Matrix games are a type of wargame that builds deep narratives over a relatively short duration, challenges assumptions with open, transparent discussion, and provides clear guidelines for adjudication (Mouat 2017). Players act as strategists, devising innovative moves that advance their interests, but they also act as

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[1] Daniel K. Inouye Asia-Pacific Center for Security Studies, Honolulu

[2] RAND Corporation, Santa Monica
[3] East-West Center, Honolulu

third-party analysts as they assess the likelihood of each move's success. Several game iterations are needed to offer a glimpse into different, possible, divergent futures that may stem from a single point.

Matrix games reinforce existing shared knowledge by rewarding good decisions and punishing bad ones in a safe-to-fail environment. For example, the US Army War College used matrix games in their European Region Study Program (RSP) resident course to "reinforce the key concepts of historical, current, or future potential conflicts" (Chretien and Goepfert 2018). For information that is known to exist, but which is unknown, such as in the cyber domain "where constructive discussion is made very difficult because of the security classifications," matrix games offer a medium for discussing the outcomes of actions without disclosing sensitive technical and operational details (Ashdown 2018). In instances where a particular decision maker is blind to what they don't know, the transparent and assumption-challenging mechanics of matrix games makes them very useful. This paper discusses one application of matrix gaming, the DPRK Matrix Game, assesses its use in executive education, and reflects on game outcomes generated by senior leaders.

Game description

The DPRK Matrix Game is an executive decision-making game developed by Tim Price in 2018 that explores crisis management in the context of major power competition. Two iterations of the game were run by DKI-APCSS in the latter half of 2018, following some of the most dramatic developments in US-NK relations in the 21st Century. In April 2017, the Trump Administration unveiled its "maximum pressure and engagement strategy" to deter the DPRK from further nuclear weapons development. The DPRK's nuclear program continued, and by August, the country allegedly miniaturized a nuclear warhead. U.S. President Donald J. Trump warned the DPRK that further provocations would be met with "fire and fury" (Baker & Choe, 2017). That same month, however, DPRK state media announced plans to launch a test missile near Guam; a threat they reiterated in October.

US-NK relations improved in March 2018 when President Trump announced plans to meet with Chairman Kim Jong Un. That month, Chairman Kim made his first official state visit to meet President Xi Jinping in Beijing. In April, South Korean President Moon Jae-in met Chairman Kim for the first time in the Korean Demilitarized Zone (DMZ). Then in June, President Trump met with Chairman Kim in Singapore. Their meeting produced a joint-statement committing to four goals: 1) A new relationship aimed at peace and prosperity; 2) Lasting and stable peace on the Korean Peninsula; 3) Complete denuclearization of the Korean Peninsula, and; 4) Recovery and repatriation of POW/MIA remains (White House 2018). At the time the wargames were played, these unresolved issues presented a backdrop for the DPRK Matrix Game.

The DPRK Matrix Game (Price 2018) was updated and modified for use in DKI-APCSS courses by the authors in consultation with Price and labelled as "DPRK 2018 Version 2." Modifications included the removal of most military hardware pages within player instructions. DPRK 2 was run in DKI-APCSS residential courses on security cooperation attended by senior-level military and civilian security practitioners. Around 45% of the participants were 1-3 star generals and admirals from the military, 45% were civilian directors, diplomats, ambassadors, ministers and secretaries, and 10% were senior police. The two iterations of DPRK 2 run in 2018 each included 13 to 14 participants from around a dozen

countries. Three additional games, slightly updated with a few developments in US-DPRK relations, were played in May 2019 with 11-12 participants each.

These courses were scheduled across five days, with the game introduced on Monday, objectives prepared on Tuesday, gameplay on Wednesday, and debriefing on Friday. The aims of the game were to explore this complex transnational security issue, develop collaborative approaches to the problem, and develop and strengthen security sector networks in the process.

Gameplay and adjudication

Prior to attending the game, players representing the United States, DPRK, Japan, China, the Republic of Korea (ROK), and Russia were provided with a short informational packet describing their assigned nations and a concise situational brief on current events in the Korean Peninsula.

Player actions occurred over three phases: arguments, counter-arguments, and adjudication. First, a team of players representing an actor proposed an action based on reasonable assumptions and established facts. This included a description of the action, its intended outcome, and 1-to-3 clear reasons for why it was likely to succeed. In phase two, other players offered counter arguments pertaining to the likelihood and outcome of the proposed action. The counter-arguments offered in this phase require players step out of their role and respond in good faith as third-party analysts. In phase three, the facilitator adjudicated on the success of the proposed action and determined the extent to which it manifested and if it generated unintended consequences. When a proposed action occurs, it becomes an established fact and a permanent part of the game narrative, which affects the success or failure of future actions. Players may forgo their turn to conduct a covert action that is adjudicated in private by the facilitator and hidden from the other players until it is used.

Facilitators generally have three methods to adjudicate an action: agreement, consensus, and voting. Some arguments, such as the resumption of Six-Party Talks on Korean denuclearization, can be resolved simply by all necessary parties indicating their willingness to participate by a show of hands. If a consensus is reached by all players on an argument's failure or success, then that argument immediately fails or becomes an established fact. However, if agreement or consensus is not possible, the facilitator takes the matter to a vote and players indicate their opinion on the likelihood of success using one of five cards (10%, 30%, 50%, 70% and 90%). Again, this is an out-of-role vote that is not biased by team interests. The facilitator states the aggregate likelihood of success based on the mode of responses. The team that initiated the argument rolls percentage dice and their argument succeeds if the result is equal to or lower than the percentage required for success. For example, if the group believes an action has a 90% chance of occurring, then any value between 0 and 90 would indicate a success, while values of 91 to 99 would indicate a failure. Based on the roll's distance from the mode, the facilitator then determines the extent to which the action manifests and if it generates any unintended consequences.

Players propose their actions with supporting arguments in clockwise order of seating. Each round of arguments is followed by a briefing from the Rapporteur, review by a subject matter expert, and a 10-minute negotiation phase in preparation for the next round. Within three hours of gameplay, players generally complete 5 rounds.

Game staff and facility

When the DPRK Matrix Game is played with up to fifteen players, the game requires a support team of three people: A Facilitator, a Rapporteur, and a Subject Matter Expert (SME). Facilitators are responsible for moderating the discussion, adjudicating arguments, and maintaining the flow of the game. Players occasionally belabor a point when they feel they are losing an argument. Recognizing this, skilled facilitators identify when consensus on an issue has been reached and intervene to progress the discussion.

Rapporteurs are responsible for building a narrative from the game. Throughout each round, they record all arguments made, along with their respective outcomes. Then, at the conclusion of each round, rapporteurs brief the group on their notes. Skilled rapporteurs track multiple threads and developments on arguments across multiple rounds and integrate these developments into their briefings.

Following the Rapporteur's briefing, the SME reviews the round. SME's provide an invaluable reality check to actions made in-game and help to legitimize the narrative. They draw links between in-game events and real-world events to highlight how the narrative approaches or diverges from reality. Additionally, SME's may propose one action of their own to add reasonable consequences to any player's action.

Outcomes

In these five games, there were 193 Actions (Asks) by players (averaging 39 per game) that generated 136 successful outcomes (Gots) after review (averaging 27 per game and 5 per round). Virtually all moves generated one or more outcomes by increasing or decreasing factors in the sixteen categories listed in Table 1.

Table 1: Total player actions in general categories with expected (Asks) and actual (Gots) outcomes.

Categories of player moves	Increase		Decrease		Total
	Total Asks	Total Gots	Total Asks	Total Gots	Success %
Investment	22	15	0	4	86
Sanctions	1	1	21	16	77
Relations	22	16	0	4	91
Talks	21	7	0	0	33
Aid	9	7	0	0	78
US Mil	2	4	9	4	73
JPN Mil	2	3	1	0	100
PRC Mil	3	3	0	0	100
Exercises	11	5	2	1	46
DMZ	0	1	4	0	25
Missile test	2	1	4	1	33
Nukes	0	0	14	5	36
Inspections	6	2	0	4	100
THAAD	2	1	1	1	67
Reunification	0	1	1	1	200*

Abductees	2	1	0	5	300*

* During the negotiation process between actors, as well as the adjudication process, some actions were awarded additional outcomes without the recipient making an explicit Ask for that outcome, which pushed the success rate over 100%.

The most popular move was improving relations through economic investments (22 Asks) and other means (22 Asks); closely followed by efforts to decrease sanctions in some form (21 Asks). Efforts to increase economic or political relations were fairly successful, with success rates of 68% and 72% respectively. However, in 8 cases, these factors actually decreased as a result of other moves.

Despite there being ample time for players to engage in negotiations between each game round, the third most popular move was attempting to initiate a talk. This included formal bilateral meetings, multilateral meetings, peace talks, treaty talks, and 6-party talks. Many of these failed immediately when the parties did not agree to participate in the talks and only a third succeeded. In cases where a meeting did take place, the expected outcomes of the meeting were often left unstated, requiring further elicitation by the adjudicator.

Military exercises were the fifth most common move and were perceived as an "easy win." However, players pushed the bounds of exercises, often making them provocative, which resulted in them failing to happen more often than succeeding. The fifth most common move was offering aid, which had a success rate of 78%. Actions providing aid sometimes failed in instances where new conditions added by one party were rejected by the other.

While there were not many efforts to increase or decrease military presence, they were often successful (73-100%). Of note, changes to the Japanese military were only made in one game and changes to the PRC military were only made in two games.

Overall, moves that focused on sensitive areas, such as borders, the demilitarized zone, missile testing and denuclearization had low success rates (25-36%). One reason for this was that players risked the odds and wasted moves by going for total denuclearization or other endpoints rather than proposing incremental steps, which might have had a higher probability of success. Inspections were, by contrast, totally successful as the DPRK used this concession effectively as a bargaining chip. Similarly, moves to increase or decrease the presence of Terminal High Altitude Area Defense (THAAD) anti-ballistic missile systems within the ROK were marginally successful (67%) because the system was seen as non-essential and a useful bargaining chip. Two out of the five games did not attempt actions that made changes to missile testing or THAAD.

Despite the Japan actors being briefed on the need to reclaim their previously abducted citizens from the DPRK, only one game featured this move. In two other games, the DPRK offered abductees as bargaining chips without being asked. No games featured a move to reunify North and South Korea, but this was gained in one game as a consequence of a related Ask.

In four games, the following subversive and covert actions were attempted.

- In the event that someone tried to restrict the flow of border goods, two separate secret moves successfully ensured that oil continued to flow from China and Russia into DPRK

- Russia and PRC requested US permission to join US-led sanctions enforcement regime around the Korean peninsula – intention was to deploy naval assets without suspicion. US accepted and Russia and PRC placed naval assets around Korean peninsula
- Russia attempted to engage in covert trade with DPRK – move was discovered resulting in damage to diplomatic relations
- Japan conducted a military exercise with ROK and US to demonstrate ICBM interception in a failed attempt to undermine the DPRK leader using a covert psychological operation
- PRC gained DPRK approval to deploy submarines around DPRK coast to destabilize ROK ally relationships, which nations found very threatening
- US successfully partnered with DPRK to turn ICBM sites into satellite launch sites with aim of gaining intel

In three games, the following unusual and novel actions were attempted.

- DPRK moved one of its nuclear missiles to PRC for disassembly and disposal as a gesture of good faith – move failed as the international community saw the move as tokenistic and without substantive value
- In two separate moves, the PRC and the US tried asking the UN Security Council to take over the management of the DPRK denuclearization process and offered aid to DPRK as part of the deal – both moves failed
- Russia offered to buy DPRK ICBMs, which was accepted and resulted in Russia demonstrating its capacity to de-escalate regional tensions resulting in boosts to power and economy
- US successfully partnered with DPRK to turn ICBM sites into satellite launch sites with aim of gaining intel

Reflections on the Matrix Game Format

By their very nature, matrix games oversimplify complex problems. However, in the process, they highlight the challenges of a problem; provide a platform for experimenting with alternative options, reactions and counter moves; provide insight into motivation; and promote thinking outside the box. The format offers a valuable learning experience that assists players to understand different national perspectives by providing an opportunity to think and understand the intractable nature of the situation. This section will offer some challenges observed in the five matrix games that may benefit future game designers. Insights were drawn from post-game participant reflections, participant surveys, after-action reviews, and observations by game designers during their rotations between games.

In any game, certain players appear stronger than others, either because they are more familiar with the rules, act more strategically, or are more persuasive within negotiations. Within the five matrix games we conducted, strong players held a large influence on action outcomes, which directly impacted their success within the game. This phenomenon was particularly noticeable for roles with relatively less leverage in negotiations, such as the ROK and Russia: Games 1 and 5 – ROK and RU dominated; Games 2 and 4 – ROK dominated and RU lost footing; and Game 3 – RU dominated and ROK lost footing. Dice rolls mitigated this issue somewhat by subjecting even the best laid plans to a level of risk and were an excellent way of getting players to think about the unexpected. Perhaps more important though were the contributions of designated SME's within the game. The SME reviews that occurred after each move kept the scenario from running away from reality by providing context and adding real world consequences to the game.

Within post-game reflections, participants noted the difficulties of getting results from talks and meetings during action phases when trust was lacking or interests did not align. In such instances, it was important for players to make effective use of the negotiation periods between each move.

Players were acutely aware of the impact of personal biases, real-world experiences and gaming experience on their ability to generate options for game play. However, this was viewed as a reflection of reality, rather than a limitation, because in the field the experience of actors can vary. Further, many in-country diplomatic teams experience changes in personnel that require people to quickly acclimate and build new relationships.

For the five games we conducted, players were randomly assigned to their roles. This format is distinct from analytical wargames, where it is always preferable for participants to play game roles that align with their experience and represent countries with which they are familiar. We found that senior level players adapted to their randomized roles by applying their years of experience in new ways. Moreover, the game narratives flowed well precisely because participants were not experts, felt less inhibited to make bold moves, and were unafraid of running into unforeseen walls. Players commented that they gained new perspective from playing in roles they were unfamiliar with.

Players began the game overly focused on their own team's interests and many found it difficult to understand the moves made by other actors. To address this, players reached out to find common interest and build relationships through continued communication, understanding and patience. While everyone understood that group dynamics and 'good faith' negotiations are developed over years of familiarity and socializing, they observed that the game allowed participants to practice collaboration and explore 'nice' options instead of focusing on worst-case scenarios.

Reflections on the DPRK

Over the duration of the game all players grew to appreciate the complexity inherent in Korean peninsula dynamics. Many found the instability of DPRK hard to fathom and even harder to manage because of difficulties in understanding DPRK motivations and rationale, and why tensions remain.

On the nuclear front, most players felt that the DPRK will continue to use nuclear power as a negotiation chip, but will never relinquish it completely. Any action to overtly denuclearize would certainly be accompanied by covert retention of nuclear strike capacity because DPRK standing and relevance is enhanced by its nuclear capacity.

The DPRK economy was seen as a clear priority for the DPRK, as well as a negotiating point for give and take. For this reason, the presence of economic sanctions on the DPRK allowed other nations to pose as benefactors by offering sanctions relief or aid. However, on the most crucial issues like denuclearization, these overtures were rarely successful unless they pertained to the DPRK's survival. DPRK leadership decisions were mostly driven by a desire for international standing, power, and survival.

Diplomatic engagements were often undermined by a lack of trust and clarity. Actions with seemingly good intent, such as humanitarian interventions, were often used as a façade to violate sanctions. Progress

between North and South Korea was largely restrained due to a lack of trust. The clarity achieved in negotiations by most parties did not carry over into subsequent actions. Major alliances that evolved in the games came together naturally between DPRK, China and Russia, and between Japan, ROK and the United States. In general, it was hard to discern what a player could influence, but the strong alliance between Japan, ROK and the United States clearly hampered PRC overtures to 'lead' the region.

Because Russia's objectives within the game did not require a specific resolution for the Korean nuclear issue, they had the most strategic flexibility. As such, their actions tended to be less clearly interpreted by other players and often perceived as exploitative of the situation.

Reflections beyond the DPRK situation

Three factors emerged as fundamental to any international crisis situation: complexity, motivation, and trust. Participants recognized that policy-makers need to be informed by a greater understanding of the complexity of the whole region that goes beyond official national interests and includes public interests that can strongly influence government behavior.

Although all players had a good level of awareness of the national postures and strategies of each of the six actor nations, they acknowledged that the perspectives and motivations of each actor were unclear, which added to situational complexity.

Simple moves often generated many unintended consequences that threw decision-makers into a reactive mode. National actions rapidly became global despite efforts to deescalate. In this context, when separated from their real-life advisors, senior leaders commented that they felt isolated while making critical decisions alone within the game.

Players recognized that momentum (snowballing) was extremely important in dialogue and was the key to making progress on difficult and complex issues. It was thus essential to maintain trust to keep momentum.

Adding to complexity was motivation. Participants found that their plans failed when their predictions of what other nations would do were inaccurate. Most players found it very difficult to understand individual actor motivations, and certain discrepancies from their expectations were blamed on the country's internal politics.

Players found that cooperation became extremely difficult when nations had different or even incompatible desired end-states with regard to motivations, priorities, and perspectives. Therefore, they recognized the importance of taking the time to look through the eyes of others. International cooperation was viewed as one vehicle that could assist in understanding national perspectives.

The development of trust in relationships was viewed as the key to cooperation and success, but the details were murky. It was not clear who to trust, which stakeholders were influencing trust, and how to create trust. Leaders agreed that in-group trust within one's coalition was essential because it paved the way for external trust.

Important negotiations and deals were made in side meetings, but not all backdoor deals were honored in practice. Personal character was raised as an important consideration. All parties recognized the need to resolve trust issues before problems materialized. Effective preparedness required that leaders take advantage of any opportunity to open dialogue and build trust.

Conclusions

The benefits of competitive gray-zone gaming extend far beyond engaging course and workshop participants or delivering custom learning outcomes. They are a proven method for amplifying "plurality, diversity and multiple perspectives, which are essential for understanding and steering through post-normal conditions" (Sardar 2015). Futurists have embraced games and simulations that permit free and creative-thinking because they "embody some of the core tenets and long-standing practices of futures: systemic, yet playful inquiry; engaged and collaborative curiosity; and anticipatory action learning through experiential approaches" (Sweeney 2017). Through the participatory and transdisciplinary engagement found in wargames, players gain insight into possible futures and open pathways to futures they prefer (Inayatullah 2008).

These DPRK Matrix games were successful in getting participants to think about complex future issues as they struggled to coordinate and lead in an unpredictable environment. The shifting relationships and vacillating allegiances significantly impacted everyone's ability to achieve their pre-stated strategic objectives as they reactively constructed their own immersive and shared narrative on what the future might hold for the Korean Peninsula.

The DPRK Matrix Game provided players with a memorable learning experience that illuminated one of the most consequential ongoing crises in the Indo-Pacific. Through active role-play, players familiarized themselves with the goals and interests of the region's major stakeholder nations; took advantage of a safe space to innovate and test out new strategies while receiving constant feedback from other players, as well as subject matter experts; and left with a deeper understanding of the opportunities and challenges on the Korean Peninsula.

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