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Report: Game Seminar I

# Nuclear Multipolarity

## Minimum Deterrence Scenarios

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### Key Issues:

- Deterrence Stability
- Coalition Dynamics
- Strategic Force Balances
- Complexity of Multipolarity
- Over-Extension of Major Powers

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## The Project

Since the end of the Cold War, new nuclear powers have emerged and nuclear proliferation continues. This shift from a bipolar nuclear system to what may become a multipolar nuclear world raises important questions: How will deterrence function in a multipolar system? What role will coalitions play? How will the distribution of strategic capabilities affect state behavior?

DFI Government Services is studying these issues in a project sponsored by the Department of Defense's Office of Net Assessment and the Defense Threat Reduction Agency's Combat Support Directorate, in conjunction with DTRA's Advanced Systems and Concepts Office. The sponsors asked DFI to develop a conceptual framework for analyzing these issues in a multipolar context. DFI

was also asked to conduct strategic gaming seminars to explore propositions developed by the framework and the implications of nuclear multipolarity for the US.

This report summarizes the proceedings at the first session in this series of three game seminars. More details on the framework and games along with analysis and findings will be presented in a final report.

## The Game Seminars

DFI is conducting a series of three game seminars for this project. Each session involves a single-tiered scenario (with only major nuclear powers), a two-tiered scenario (with major and minor powers), and a discussion segment that examines related issues, such as the effects of new offensive and defensive capabilities. Given the hypothetical nature of these scenarios, the states included in the games are not intended to represent any actual countries, although

similarities and implications for the real world may exist.

The games include multiple iterations and focus on decisions about confrontations, coalitions, and capabilities. Players also have an opportunity to discuss game play and design along with the implications of the scenario results.

The primary purpose of these seminars is to explore propositions that were developed in the preceding analytical

phase of the project. The series will also generate baseline information for an assessment of the framework. This will provide important information for creating a more formal and detailed approach to conduct further analysis. Implications for US strategy and policy will also be noted.

The games in this series are intended to be informal, serving more as a structure for exploration of key issues than as a model of behavior.

## Game Seminar I: Minimum Deterrence



DFI International  
Washington, DC

The first game seminar was held on 22 April 2003 at DFI's Washington, DC office. The distinguishing feature of this session was the assumption for all scenarios that each major nuclear power had the capability to retaliate against only one other major power or up to three minor powers. Minor powers were not assured of the ability to retaliate against any state.

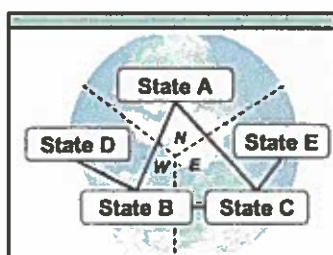
This assumption was based on the concept of *net retaliatory capabilities*, defined as the nuclear capabilities remaining after an initial strike by one or more adversaries. This approach considers both offense and defense, allowing for deterrence by retaliation as well as deterrence by denial strategies.

The scenarios posit a

hypothetical multipolar nuclear world in a 2020+ timeframe. States are assumed to have interests in different regions of the world and varying levels of risk propensity. Game participants played the roles of these states to make decisions on risking conflicts that could involve nuclear use, forming nuclear coalitions, and enhancing strategic capabilities.

### Scenario 1: New Major Nuclear Powers

Participants agreed that this multipolar nuclear world was extremely complex and potentially unstable with coalitions playing a critical role.



Scenario 1: Single-tiered scenario with five major nuclear powers. State A is the global *status quo* power while B and C are the revisionist states.

The first scenario involved a single-tiered multipolar nuclear world with five major nuclear powers possessing roughly equal capabilities and stature, but varying in risk propensity and their interest in the *status quo*. It began with a signaling round in which the teams made decisions about their postures on regional confrontations, potential coalitions, and enhancing strategic capabilities. The subsequent iteration involved decisions on actual actions based on the inputs from the signaling round.

During the signaling round, teams exhibited a range of strategies. One team, playing a *status quo* state with global interests across multiple regions, was concerned about over-extension. As a result, this team avoided signaling confrontation and extended coalition offers to all other states.

Another team, playing a revisionist state, signaled its intent to challenge the *status quo* in one region and attempted to establish coalitions that would support this effort and deter other states from intervening. This round generated a great deal of discussion among the participants.

The next round resulted in a breakdown of deterrence and a conflict between the two states noted above. The *status quo* state had hoped that its coalitions would deter challengers while the revisionist state placed an emphasis on its willingness to take risks. One state successfully escaped the isolation indicated in the signaling round, only to join a coalition in the midst of the conflict.

Discussions revealed that participants rigorously worked to figure out what

other teams were likely to do and to identify their own best options. The initial distribution of capabilities appeared to play a central role in their decisions, encouraging more balancing than bandwagoning behavior due to significant uncertainty. Some teams tried to take advantage of perceived asymmetries in regional interests or perceived over-commitment by other states. They also attempted to gauge the risk propensity of other teams when deciding whether to confront them.

In the end, the system appeared to be unstable. Deterrence broke down and volatile coalitions played a critical role in decisions. All participants noted that conditions seemed to encourage more risk taking (even by *status quo* powers) despite the risks of nuclear use.

## Scenario 2: A Proliferated World

The second scenario subtracted some major nuclear powers and added a tier of minor nuclear powers. In this case, there were three major powers and five minor powers each with unique regional interests and risk propensity.

The signaling round reflected both changes in the system and lessons learned from the previous scenario. Participants more assertively signaled their commitment to their interests in a bid to deter confrontations. They also paid greater attention to signaling their coalition intentions in order to create a situation that would help them pursue their interests.

Once again, the action round resulted in a breakdown of deterrence and conflict risking nuclear use. Two revisionist major states assembled a powerful coalition to challenge the *status quo* in their regions. As a result, the major *status quo* power with global interests found itself facing challengers on two fronts. At the same time, minor revisionist powers, expecting the major *status quo* state to back down, jumped in opportunistically.

Attempts by revisionist states to balance against each other during the first scenario gave way in the second scenario to bandwagoning behavior.

Coalitions remained somewhat volatile, but tended to coalesce into two large revisionist blocs with a slight overlap.

This situation favored the major revisionists. Previously, the major revisionists had been forced to contend with a number of major *status quo* states. Now they faced only a single major *status quo* state and a mix of nearby minor states with varying interests. As a result, the major revisionist states gained the upper hand, building a powerful coalition. The major *status quo* state clearly became overextended and was more focused on securing its regional interests than on managing direct threats to its homeland.

Minor state behavior also offered significant challenges to deterrence stability. In forming coalitions, the minor states reached out to major states of compatible alignment. The existence of two major revisionist states acted as a "center of gravity" for minor-state bandwagoning. At the same time, minor states also formed balancing coalitions with one another, each tending to reach out to one or more other minor states with common adversarial relationships with a third or fourth minor state. These coalitions were formed without evident

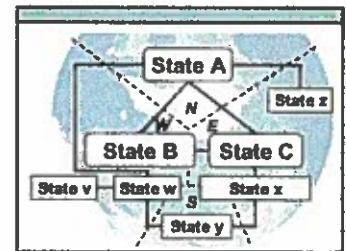
concern about one another's orientation to the *status quo*.

This combination of bandwagoning with major states and balancing with other minor states created crosscutting coalitions and made it very difficult to isolate minor revisionist states. The major *status quo* power risked engaging a major power adversary if it tried to confront minor revisionists. This may have created opportunities for these minor powers to challenge the *status quo*.

While discussing these outcomes, some participants expressed concern that coalitions might be too weak to provide security, while accentuating risks of being drawn into conflict. Major powers were more concerned about entangling nuclear alliances than minor powers, while all questioned the reliability of such coalitions. These issues were not tested during the limited number of iterations, but did affect some decisions.

Participants emphasized the complexity of this scenario, which required more sophisticated judgments than the first. They also noted that the inherent instability in the system seemed to be enhanced with this increased uncertainty.

*The complexity of a two-tiered nuclear world led participants to express their concern that such a system would be difficult to navigate safely.*



**Scenario 2:** Two-tiered system with three major nuclear powers and five minor powers. State A remains the global *status quo* power while B and C remain the major revisionist states.

*One participant noted that as a "lifelong inhabitant" of a major nuclear state, he now had a greater appreciation for the challenges and frustrations faced by minor powers.*

## Discussion: New Strategic Capabilities

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*The major issue participants wanted to examine in this framework was the distinction between offensive and defensive capabilities.*

The discussion session examined specific issues that might influence how a multipolar nuclear world might function in the future. Based on their experience with the scenarios above, participants were asked to consider how the inclusion of advanced nuclear capabilities, effective defenses, and advanced targeting capabilities might change the way they played their roles.

In general, the participants

agreed that these issues were too specific to change their decisions under the current game design. They suggested that a greater level of detail was required in the game design for these issues to make a significant difference in game play.

However, they did identify broader, related issues that could have affected their decisions, including potential for decapitation, the ability to prevent

damage to minor-state partners, and doctrinal shifts leading to a strategy of deterrence by denial with nuclear weapons rather than by retaliation.

Overall, the participants noted that these issues could be divided roughly into offensive and defensive capabilities. They believed examining the distinction between the roles played by these types of capabilities would be particularly useful.

## Wrap-Up

During the final discussion of the day, participants were extremely supportive of the project. They felt the day had produced interesting and relevant discussions, providing "food for thought" about what a multipolar nuclear world might be like. All expressed interest in developing this approach

further to deal with more specific issues in greater detail. Many encouraged formalizing and enhancing the game design to allow for more elaborate and rigorous play.

Participants also generally agreed on three specific recommendations: 1) Iterations should be split

into shorter rounds, allowing states to get a firmer sense of their coalitions and capabilities before considering initiating any challenges; 2) Resource constraints should be considered; 3) Conflicts should be modeled to include crises and potential hostilities.

## Real World Implications

This game seminar offers a glimpse of what a multipolar nuclear world might look like.

- **Deterrence:** Under the "minimum deterrence" conditions assumed in these first scenarios, deterrence was unstable and often subject to miscalculation.
- **Force Structure:** The instability of minimal deterrence may have implications for planning

strategic force levels.

Lower levels may be more risky as the number of nuclear powers grows.

- **Coalitions:** Coalitions may be critical but very volatile in this type of multipolar nuclear world. They also risk entangling members in conflicts that risk nuclear use.
- **Complexity:** Uncertainty associated with the complexity of

this system may have contributed to risk-taking more than to cautious behavior.

- **Over Extension:** These scenarios demonstrated the challenges for a *status quo* power with global interests. Such a state may find itself over extended and facing challenges on many fronts. Furthermore, minor powers may seek to take advantage of this situation.

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*The instability and complexity of these scenarios suggest that "minimum deterrence" may not be sufficient in a multipolar nuclear world.*



## Next Steps

The next game seminars will take place at DFI on 29 April and 06 May 2003. They will involve similar scenarios and discussions, but the assumptions about the initial distribution of strategic capabilities will differ.

In this first game seminar, a single major nuclear power could hold only one other major power at risk. The second session will assume a robust

deterrence where a single major nuclear power can hold all other nuclear powers at risk. The third session will examine an intermediate case where major nuclear powers can hold two other major powers at risk.

The outcomes of these sessions will be compared to those of this first session. Game reports will be available for all three game seminars.

DFI will complete this project in June 2003 by providing a final report to the sponsors. This report will include details of the conceptual framework developed for this project and the game seminars used to explore propositions raised by analytic phase of the project. The report will also include implications for policymakers and for further study.

## Game Seminar I Participants

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## About DFI Government Services

Established in 1984 by Dr. Barry M. Blechman, DFI Government Services supports decision and policy-makers in the US national security community. We are recognized for our incisive work in areas ranging from strategic studies and homeland security assessments to military operations data management and international program implementation.

DFI supports a number of

US Government departments and agencies throughout the defense and intelligence communities. Whether conducting weapons of mass destruction assessments, designing and building innovative knowledge management systems, or advising senior officials on issues of strategy and policy, DFI's research, analytical and technical expertise enables US leaders to make smarter, more informed decisions.

We offer specialized expertise in research and analysis, knowledge management, modeling and simulation, as well as facilitation and outreach. Our team has a reputation for developing solutions that are timely yet thorough; creative yet empirical; and innovative yet pragmatic.

DFI provides substance for decisions through research, analysis, and knowledge management for US national security.

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