From inference to influence: applying causal game theory to complex security environments

Vonk, M.C.

Summary

Effective policy-making requires a clear understanding of what truly causes a problem. Only through such understanding can policymakers develop targeted interventions that achieve the desired outcomes. However, establishing causal relationships presents a significant challenge, as observed patterns do not automatically indicate true cause-and-effect relationships.

This thesis provides various tools for applying causal analysis methods to complex security environments. What distinguishes some of these methods is their consideration of how different parties react to one another. In complex security environments, countries, organizations, and groups do not act in isolation; they anticipate each other's actions and adapt their behavior accordingly.

The thesis presents a structured framework that supports policymakers in selecting appropriate analytical methods for specific policy questions. For each method, the necessary assumptions are explained along with practical guidance for implementation. Additionally, it demonstrates how causal analysis can be combined with strategic thinking by incorporating the intentions and potential reactions of adversaries.

A concrete methodological innovation involves the development of an automated method for identifying optimal intervention points. This approach enables policymakers to specify desired policy objectives, after which algorithms determine which interventions are most effective and how relevant variables should be adjusted.

The practical applicability is demonstrated through two current security challenges: hybrid threats and climate-related conflicts. These cases are characterized by inherent uncertainty, multiple strategic actors, and mutual dependencies.

The research results in an analytical toolkit for decision-making in complex security environments. These instruments not only facilitate more informed policy choices but also contribute to developing the analytical capabilities necessary for navigating strategic complexity in contemporary security issues.