

Structured Argumentation

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MITRE Sponsored Research

The logo for the MITRE Technology Program, featuring a stylized graphic of stacked blocks in yellow, orange, and blue to the left of the text.

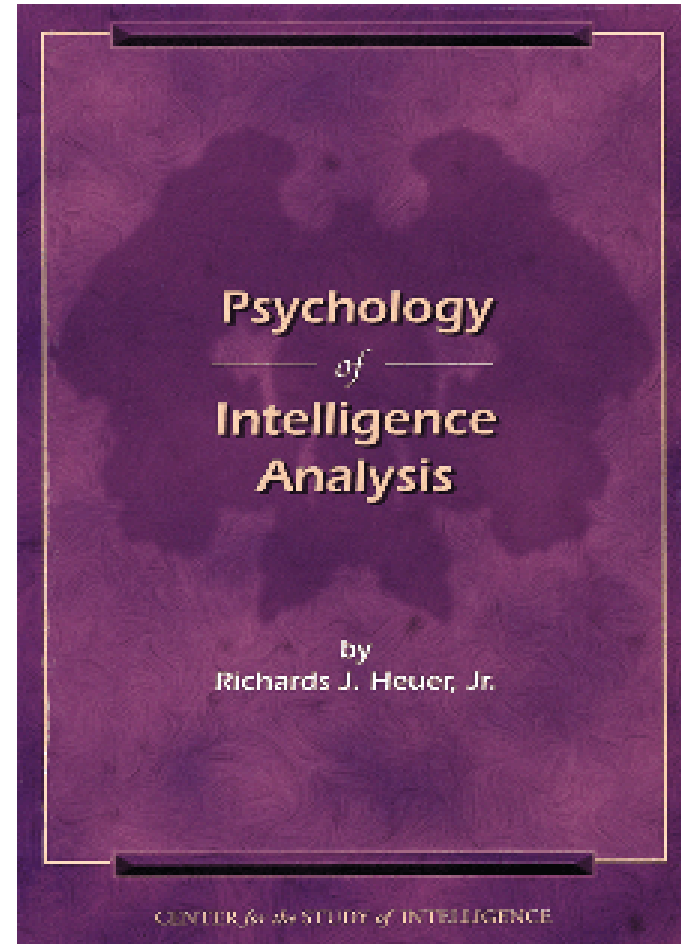
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Problem

- **Structured Argumentation** is a method of reasoning characterized by explicit and detailed conclusions and supporting arguments
- Advocates claim Structured Argumentation will promote better intelligence analysis, but there is little hard evidence that this is true.

Background

“Tools and techniques that gear the analyst's mind to apply higher levels of critical thinking can substantively improve analysis on complex issues on which information is incomplete, ambiguous, and often deliberately distorted. Key examples of such intellectual devices include techniques **for structuring information, challenging assumptions, and exploring alternative interpretations.**”



Objective

- **Test the hypothesis:** Does Structured Argumentation promote better intelligence analysis?
- **Evaluate** emerging and commercial information technology applications that support Structured Argumentation
- **Conduct experiments** to evaluate impact of Structured Argumentation on analysis products and processes

Activities

- **Developing empirical research protocol**
- **Completed first experiment pilot**
- **Ongoing evaluation of commercial technology (e.g., SEAS)**
- **Sharing of lessons learned and ongoing activities**

Highlight

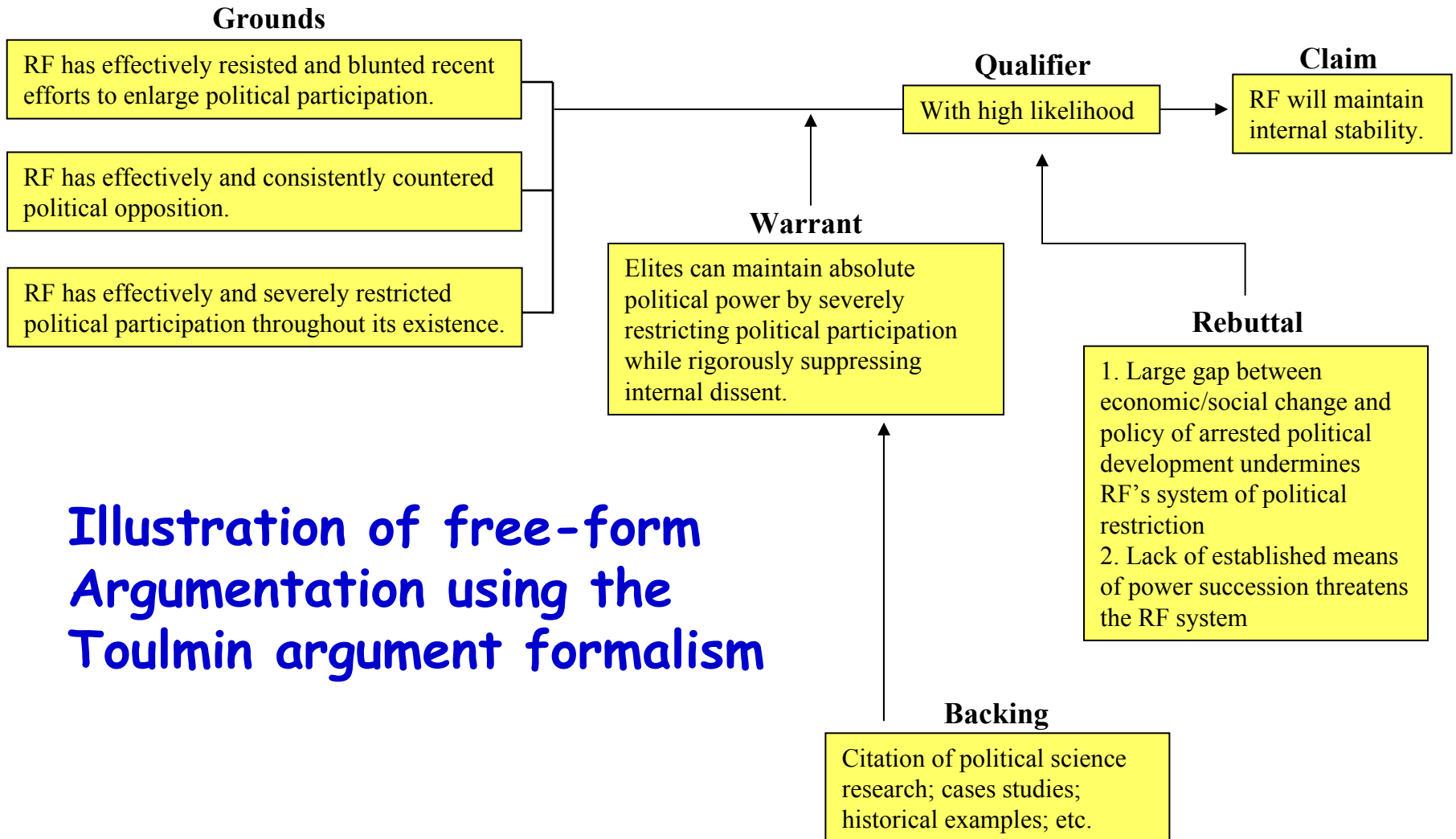


Illustration of free-form Argumentation using the Toulmin argument formalism

Demonstration

Structured Evidential Argumentation System (SRI International, Inc.)

Unidimensional Argument/Template - Netscape

Template: INTERNAL SECURITY V1.2

capture exit

copy delete rename export

Base Question:

INTERNAL SECURITY SITUATION: Will the Country's internal security position deteriorate significantly?

Supporting Questions:

ARMED INSURGENCY AND TERRORISM: Is armed insurgency or terrorism within the country growing?

INTERNAL SECURITY CAPABILITIES: Are the capabilities of the Government to manage and maintain internal security decreasing?

CRIMINAL ORGANIZATIONS: Is the Government's control over organized crime decreasing?

BORDER SECURITY: Is the Governments ability to secure its borders decreasing?

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Unidimensional Argument/Template - Netscape

Argument: ColombiaInternalSecurity-4Q2001

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TEMPLATE



ARGUMENT INSTANCE

Impacts

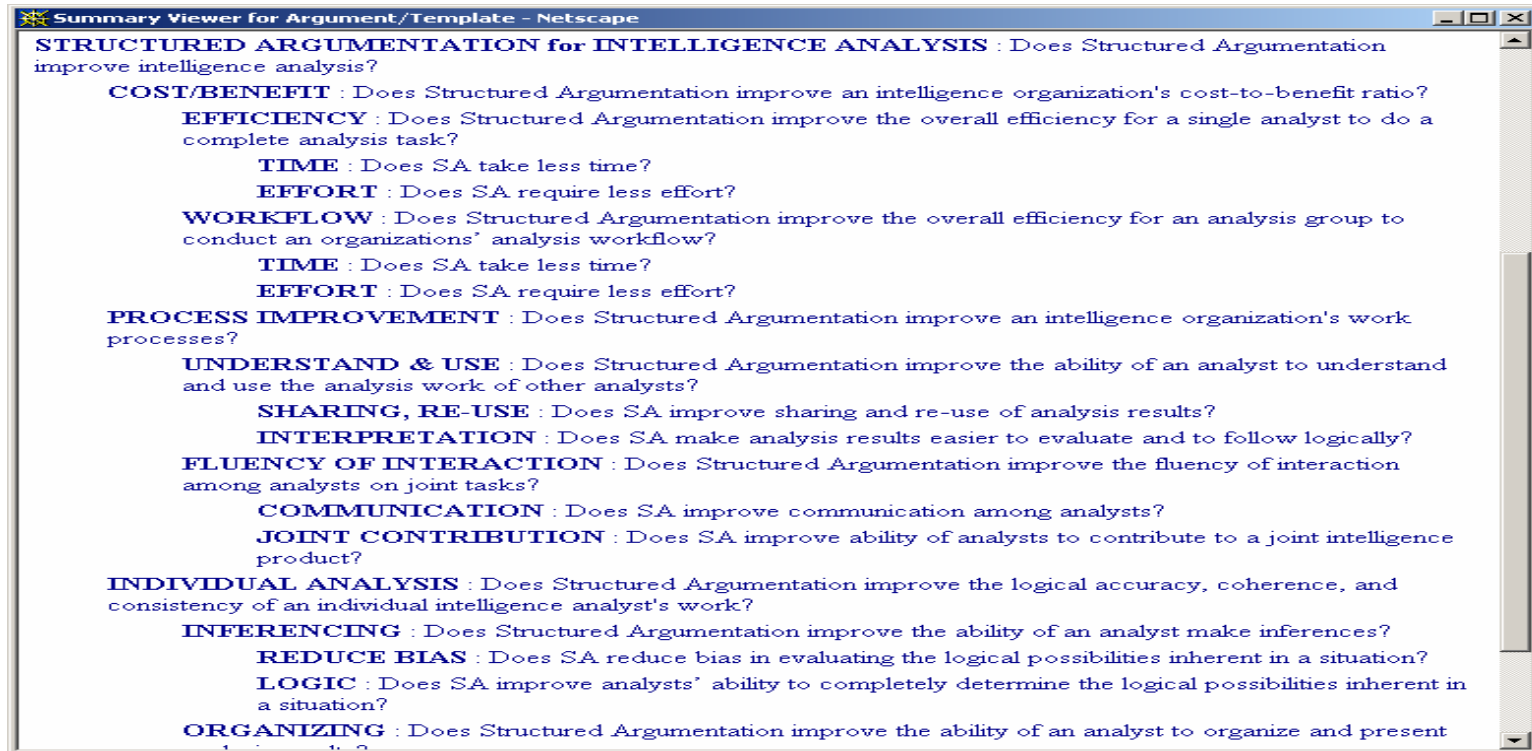
■ Operational impact

- Completed SEAS pilot with MITRE analysis group
- Stood up SEAS Server

■ Knowledge capture/dissemination

- Known source of expertise for internal and sponsor use of argumentation tools

Future Plans



**Define and Execute Research Protocol
for Critical Cost-Benefit Questions**