

Emerging Technology + International Security

17.449

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Key Themes from Last Class

- Technology/Innovation as a Variable
 - Dependent vs. Independent
- Challenges of studying new technology
- Key course themes --> How does technology affect:
 - Actors
 - Occurrence of conflict
 - Character
 - Consequences

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Studying Emerging Technologies

- Limited operational history



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Studying Emerging Technologies

- Data are often classified

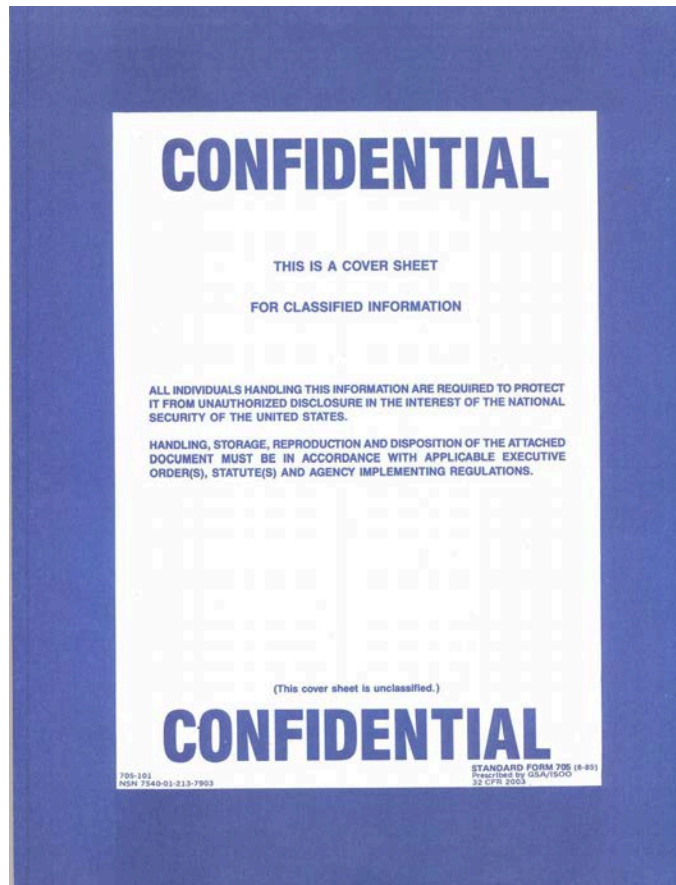


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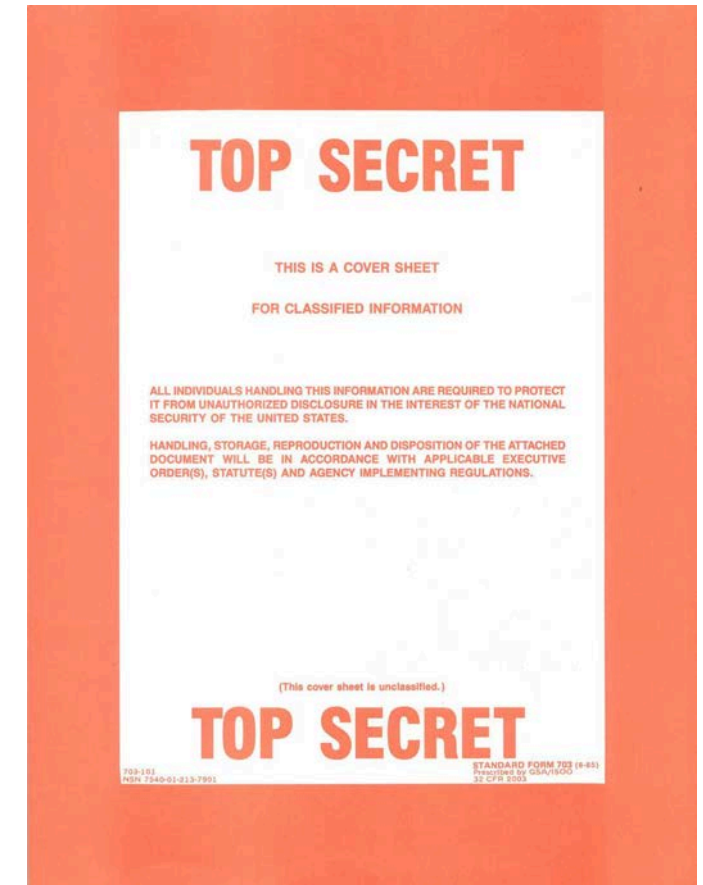


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Mental Maps and Models

The Grand Island of California



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Our Mental Maps: International Security

- We have mental maps/models about
 - Actors
 - Occurrence of conflict
 - Character of conflict
 - Consequences of conflict

Our Mental Maps: International Security

What does warfare look like?

Our Mental Maps: International Security



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Our Mental Maps: International Security



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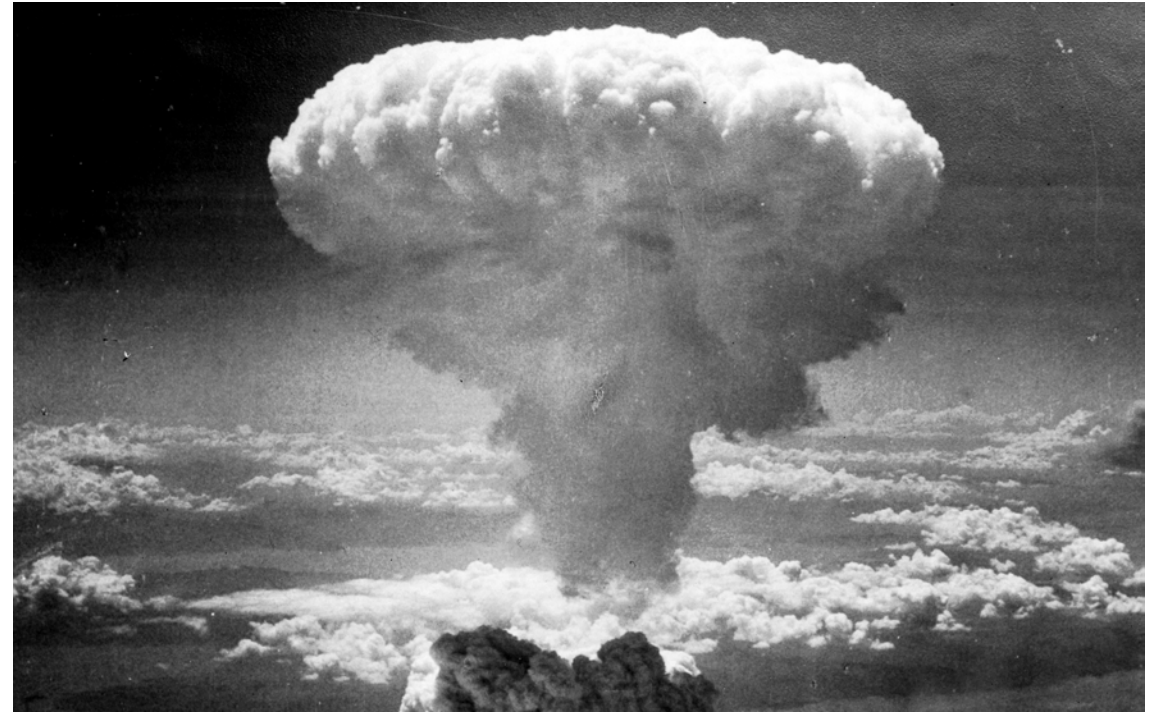


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Our Mental Maps: International Security

What does an attack on the United States government look like?

Our Mental Maps: International Security



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Our Mental Maps: International Security

What threat has the greatest potential to affect the American way of life?

Our Mental Maps: International Security



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Our Mental Maps: International Security

- This is a problem for thinking about the effects of emerging technology...
- What can we do to overcome these obstacles?

Scenario Planning



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Scenario Planning

- A tool for thinking about plausible futures
 - Aimed at policymakers
 - Strategy development/Option generation → “lead to action”
- Must be grounded in reality
 - “Rooting”: scenarios as trees
 - Plausible outcomes on areas of interest
 - Near to mid term future; not long range
- Plausible, but not necessarily predictive

Scenario Planning

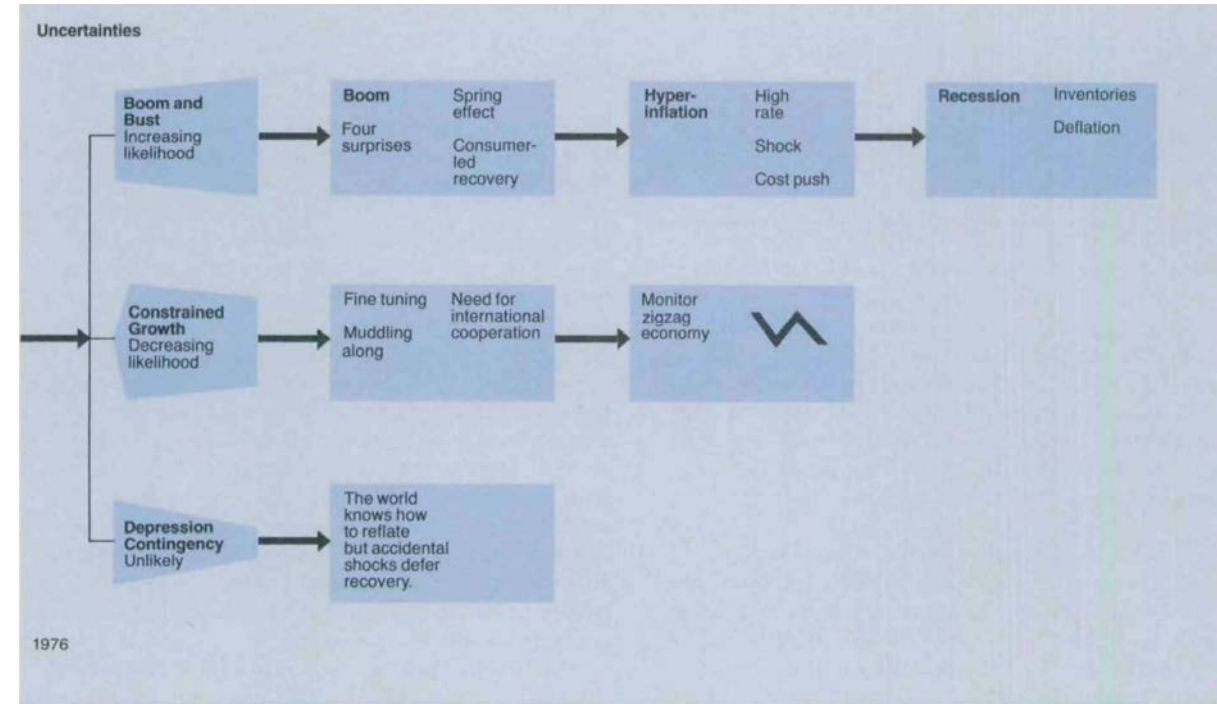
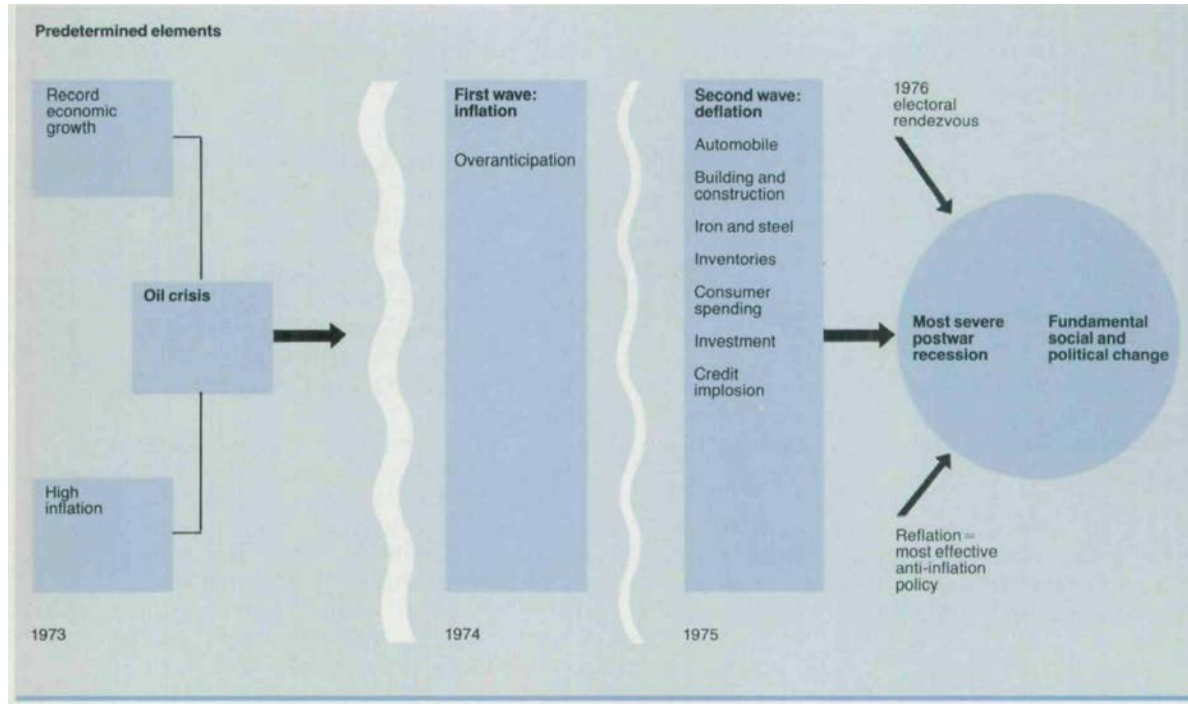


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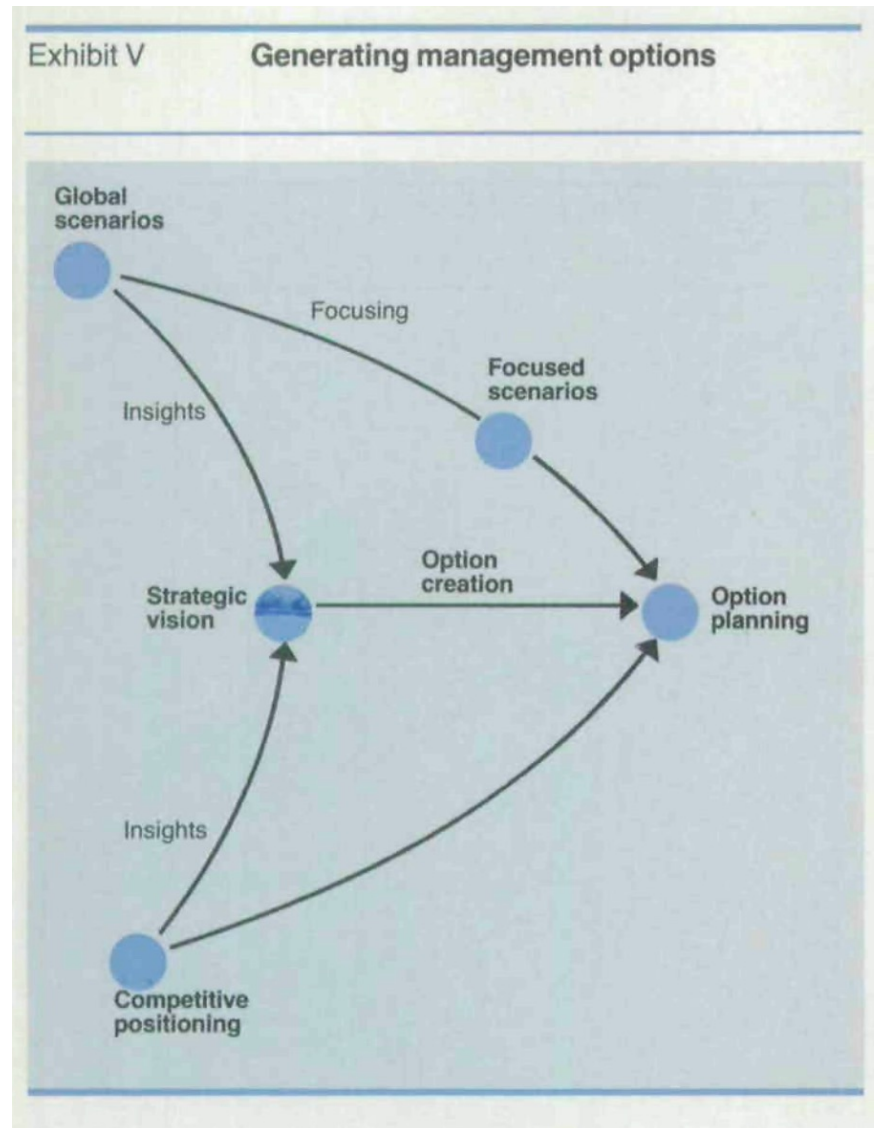
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Scenario Planning



Wack, Pierre. From "Scenario: Shooting the Rapids." *Harvard Business Review*, November–December 1985, 139–50. © Harvard Business Publishing. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>.

Scenario Planning



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Scenario Planning

- It's not just industry that uses scenarios planning



Global Trends 2040: A More Contested World. 7th ed. National Intelligence Council, 2021. This image is in the public domain.



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Scenario Planning

- What are the key technologies they discuss?
 - AI
 - Manufacturing and Materials
 - Biotech
- What effect do these technologies have?
 - Speed of innovation
 - Interaction: security, domestic politics, law, ethics, privacy
 - Nature of society: state-led vs. open societies
 - Positive and negative consequences

Scenario Planning

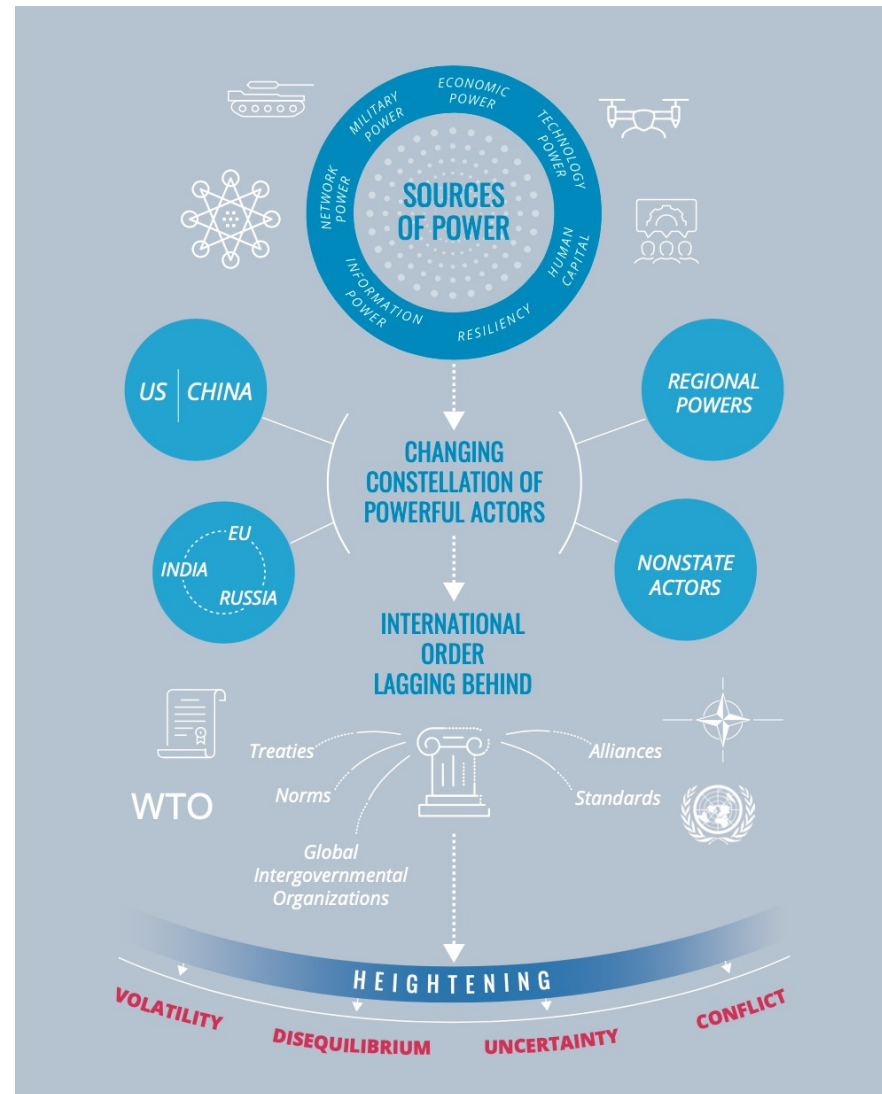


"Scenarios for 2040: Charting the Future Amid Uncertainty." From *Global Trends 2040: A More Contested World*, 7th ed. National Intelligence Council, 2021. This image is in the public domain.

Scenario Planning

- What are some commonalities across these “future worlds”?
- What are some differences?

Scenario Planning



"Emerging Dynamics: International: More Contested, Uncertain, and Conflict Prone." From *Global Trends 2040: A More Contested World*. 7th ed. National Intelligence Council, 2021. This image is in the public domain.

Let's do our own scenario analysis...

1. How do we define/measure power in this world?

Power is...

2. Who are the most important/influential actors in this world?

The most important actors are...because...

3. What are the most significant disputes in this world? What are major areas of cooperation?

The most significant disputes are...

What evidence today exists that this scenario could be unfolding?

Evidence

Should we pessimistic or optimistic about the role of technology in this world?

Pessimistic/Optimistic
...Be prepared to explain why

4. Identify the most important goal for each actor:

USA

China

Russia

Alibaba

The UN

5. From the EU perspective, what are the country/region's greatest a) strengths; b) weaknesses; c) opportunities; d) threats

Strength:

Weakness:

Opportunities:

Threats

5. (How) should government, international organizations, and private groups regulate technology policy in this world? What are the most pressing policy needs?

Policy discussion...

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