

# What Strategic Planners Need to Know in the Age of Uncertainty

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# The claim: 2 types of expertise

## First expertise:

Extensive **topical, disciplinary expertise**, and broad understanding of human affairs.

## Based on:

history, economics, political science, anthropology, psychology, etc.

## Second expertise:

Methodological **expertise in decisions under uncertainty**.

**Based on:** decision theory (including info-gap theory).

# 3 reasons for double expertise

## **Uncertainty and indeterminism in human affairs.**

Ignorance and surprise are common and must be managed.

## **Uniqueness of each historical situation.**

The past is only partial indication of the future.

Theory only partially explains reality.

## **Pluralism of assessment is essential.**

Don't seek the single best model.

Seek diverse perspectives.

Use decision theory to manage disputed understanding.

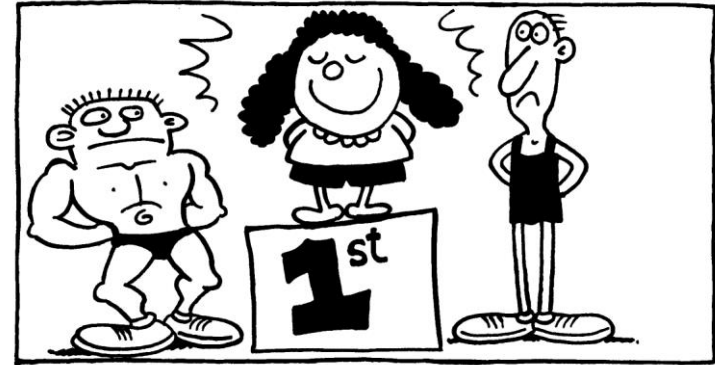
## **Decision theory supports good decision making.**

# Uncertainty and the Optimization Imperative

## Doing your best:

What does that mean?

- Outcome optimization.
- Procedural optimization.



Implications for decision making:  
**Robust satisficing.**



# Doing Your Best

## Outcome optimization:

- Predict outcomes of available options.
- Select predicted best option.

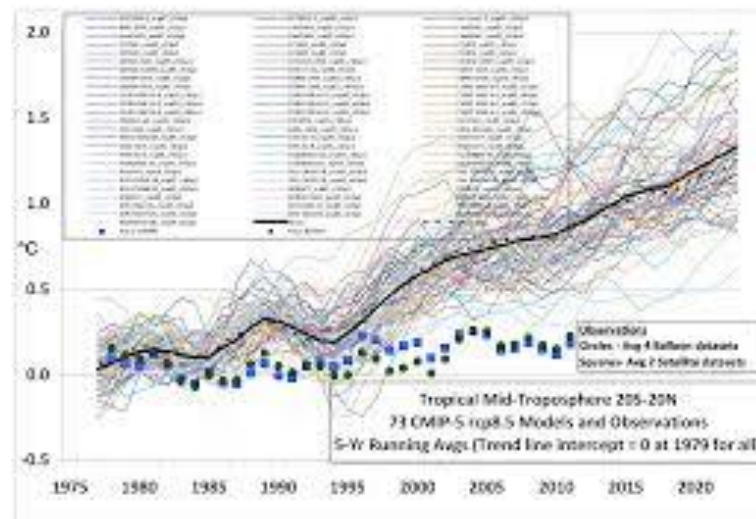


# Doing Your Best

Outcome optimization.

Useful under risk:

- Structured uncertainty.
- Reliable probabilistic predictions.



# Doing Your Best

Outcome optimization:

Useful under **risk**.

Not useful (irresponsible?) under **uncertainty**.

- Unstructured uncertainty.
- Unreliable predictions.



Is this thing  
plugged in?

# Robust Satisficing

## Two questions for decision makers:

1. What are our goals?
2. How much error/surprise can we tolerate?





# Robust Satisficing

## Two questions for decision makers:

1. What are our goals?
2. How much error/surprise can we tolerate?

## 1. Satisficing: Achieving critical outcomes.

- Essential goals.
- Worst acceptable outcomes.
- Modest or ambitious.



# Robust Satisficing

## Two questions for decision makers:

1. What are our goals?
2. How much error/surprise can we tolerate?

## 1. Satisficing: Achieving critical outcomes.

## 2. Robustness:

- Immunity to ignorance.
- Greatest tolerable error or surprise.

# Robust Satisficing

**Two questions for decision makers:**

1. What are our goals?
2. How much error/surprise can we tolerate?

**1. Satisficing: Achieving critical outcomes.**

**2. Robustness: Greatest tolerable error.**

**Optimize robustness; satisfice goals:**

**Procedural (not substantive) optimization.**

# Al Qaeda: US options pre 9/11

## Combine 3 options, emphasize 1:

Surveillance & reconnaissance of U.S. Muslims (SRM).

Enhanced border control: manual, technological (EBC).

Physical protection of vulnerable sites and individuals (PPS).

**Goal:** Reduce injury and damage.

**Putative best choice for predominant option:** EBC. Because:

Geographically most focused.

Least dependent on “when, where and how” of attack.

**Putative best choice ignores uncertainty. Use:**

Info-gap robust satisficing based on intelligence assessment.

# Al Qaeda: pre 9/11 briefing

AQ: militant Sunni organization.

Founded 1988 by OBL and others.

Loose network in E Africa and Middle East.

## **Ideology and goals:**

**No non-Muslim influence** in Muslim regions.

Eventual **Islamic Caliphate**: strict sharia.

**Salafist jihad**: killing non-combatants, even Muslims, ok.

Liberal Muslims, Shias, Sufis and other sects are **heretical**.

**Christian-Jewish alliance** conspires to destroy Islam.

# Al Qaeda: pre 9/11 briefing

- 6 attacks or attempts** by, or associated with, AQ (pre 9/11):
- 29.12.92: bombed 2 hotels in Aden, Yemen. Target: Marines.
  - 26.2.93: World Trade Center, NYC. Not official AQ; training.
  - 7.8.98: US embassies: Nairobi, Kenya; Dar es Salaam, Tanzania.
  - 3.1.00: USN destroyer *The Sullivans*, port of Aden, Yemen.
  - 12.10.00: USN destroyer *Cole*, port of Aden, Yemen.
  - 13.10.00: Grenade at UK embassy, Sana'a, Yemen.

## Intervals:

2 months. 5yr 2mon. 1yr 5mon. 10 mon. 1 day.

1996: CIA “virtual” Alec Station setup focused on OBL, AQ.

1<sup>st</sup> head: difficulty convincing CIA to take AQ threat seriously.

# Al Qaeda: pre 9/11 briefing

AQ frequent in PDB; sharp rise in 2001 prior to 9/11.

## **PDB of 6 Aug 2001:**

“Bin Ladin Determined to Strike in US”.

No specific tactical info: when, where, how.

AQ “apparently maintains support structure” in US.

AQ may be “recruiting Muslim-American youth for attacks”.

“Preparations for hijack or other attacks ... with explosives.”

Scattered evidence of suspicious people in AZ flight schools.

# Robustness analysis of 3 options

## Combine 3 options, emphasize 1:

Surveillance & reconnaissance of U.S. Muslims (SRM).

Enhanced border control: manual, technological (EBC).

Physical protection of vulnerable sites and individuals (PPS).

**Goal:** Reduce injury and damage.

**How to decide:** Assess robustness with 6 conceptual proxies.



# Robustness analysis of 3 options

## 1. Resilience: rapid recovery of critical functions.

### **SRM:**

Incomplete coverage of Muslim communities & institutions.  
Slow reallocation of some resources.

**EBC:** Covers only official entry points, not all borders.

**PPS:** Moderate recovery of capability in some incidents.

# Robustness analysis of 3 options

## 2. Redundancy: multiple alternative solutions.

**SRM:** Diverse electronic and human methods. Overt & covert.

**EBC:** Diverse inspection methods.

**PPS:** Diverse protection methods.

### However:

Each option covers only specific vulnerabilities.

High redundancy of each option within its domain.

Low redundancy of each option overall.

# Robustness analysis of 3 options

## 3. Flexibility (agility): rapid modification of tools and methods.

### All options:

Large body of specialized trained agents.

Low flexibility for SRM and EBC. Medium for PPS.

## 4. Adaptiveness: adjust tools & methods in mid to long term.

### All options:

Large body of specialized trained agents.

High adaptiveness.

# Robustness analysis of 3 options

## 5. Margin of safety: preponderance of capabilities.

### SRM and EBC:

Preventive or pre-emptive. No physical protection.

**PPS:** prepare for diverse attack modes. Reinforcements.

## 6. Comprehensiveness: interdisciplinary system-wide coherence.

### All options:

Each option covers only specific vulnerabilities.

No social integration. No communications surveillance.

Overall comprehensiveness low.

# Robustness analysis: Conclusion

Proxy	SRM	EBC	PPS
Resilience	Low	Low	Medium
Redundancy	Medium	Medium	Medium
Flexibility	Low	Low	Medium
Adaptiveness	High	High	High
Margin of safety	Low	Low	Medium
Comprehensiveness	Low	Low	Low

## Overall assessment:

SRM, EBC: low-medium robustness. PPS med-hi robustness.  
Combine options, emphasize PPS. Add social dimensions.  
Seek versatility or jointness in PPS, not specialization.

# Summing Up

**Strategic planners** face severe uncertainty and surprise.

**Strategic planners** need **dual expertise**:

- Topical, disciplinary subjects.
- Decision making under uncertainty.

**Methodology: Info-gap robust satisficing.**

- Satisfice the outcome.
- Optimize the robustness to surprise.

**Questions?**



# Questions?

