Science advice and the management of risk in government and business

Why don’t they listen: why won’t they listen?

Sir David Omand
Visiting Professor,
Department of War Studies
King’s College London
10 November 2010

To reduce the risk to the UK and its interests overseas from international terrorism, so that people can go about their normal lives freely and with confidence.

Deliberately constructed as an exercise in risk management

Expected Risk = likelihood x vulnerability x impact

Prevent
Pursue
Protect
Prepare

Increasing use of risk management in national security:
CONTEST Counter-terrorist Strategy
Identifying and managing national security risks to the UK

Tier One
- Terrorism
- Cyber security
- Civil Emergencies
- Instability and Conflict Overseas

Increasing use of risk management in national security: 2010 UK National Security Risk Assessment

An analogy with another professional discipline: the use of intelligence to reduce the risks in decision making

- Intelligence: enables action to be optimised by reducing ignorance (and secret intelligence achieves this objective in respect of information that others wish to remain hidden)

  - Improving the odds of acting in line with our goals beyond what we would have achieved had we simply tossed a coin to decide between courses of action, acted on hunch or wrong information, or allowed events in the absence of decision to decide the outcome
How intelligence analysis can help the policymaker

- **Strategic notice** of possible futures, to help cue further work
- **Situational awareness** of relevant factors: answering ‘what, who, where, how big?’
- **Explanation** of causal relationships: answering ‘how, why, what for?’
- **Prediction**: answering ‘what next, where next?’, and
- **Modelling**: ‘if x were to happen then what?’

Many things have to go right for intelligence to be useful to a policymaker

1. There have to exist ‘data points’ to be accessed
2. The Agencies have to access the information
3. The analysts have to interpret and assess it correctly
4. The policymakers have to receive it in an assured and timely way
5. The policymakers have to understand and accept its significance
6. The policymakers have to make the right judgment calls on the basis of it
Why would a decision-taker act on an assessment?

- It is simply empiricism
- It comes from ‘authority’
- It matches habits of thought and conventional wisdom
- It follows a logical argument
  - Deduction, Induction (care!) (or Abduction)
- It uses evidence to discriminate between hypotheses, and provides the simplest explanatory hypothesis consistent with the known facts

What risks are in the decision-takers’ minds?

- Lives lost/injuries sustained
- Disruption of economy/lost output
- Disruption of societal systems/power, water etc
- Domestic confidence/‘animal spirits’
- Civic harmony
- International reputational damage
- Votes?
- Personal reputation and advancement?
Why would a decision-taker resist accepting an assessment? Differing psychologies?

Analysts

- Seek impartiality
- Want to explain the world
- Try to stick to the evidence
- Will tend to caution in estimates
- Use complex language
- Take the time necessary

Decision-takers

- Want to change the world
- Will challenge the relevance of the evidence
- Want options kept open
- Know that it is necessary to over-ride objections
- Need certainty in public

Adapted from Squaring the Circle: Dealing with intelligence-policy breakdowns, K L Gardiner, Intelligence and National Security 6/1 (1991)

Common pitfalls

- Cognitive dissonance, group thinks and emotional resistances
- The observer-expectancy effect: expecting/wanting a result and unconsciously misinterpreting data to find it
- The Von Restorff effect (the item that ‘stands out like a sore thumb’ is more likely to be remembered)
- Perseveration
- Mirror-imaging
Remedies?

- For the analysts
  - Safeguard reputation for professional independence
  - Understand how best to help reduce the risks of decisions
  - Disclose fully the limitations and caveats of the assessment
  - Keep judgments on ‘mysteries’ separate from those of ‘secrets’
- For the decision takers
  - Accept most risks can be managed; few can be eliminated
  - Understand low risk does not mean no risk
  - Understand the limitations of any analytic process
  - Do level with public about risk
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Pinning down the use of words: the Uncertainty Yardstick

<table>
<thead>
<tr>
<th>Qualitative statement</th>
<th>Associated Probability Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote/Highly Unlikely</td>
<td>&lt; 10%</td>
</tr>
<tr>
<td>Improbable/ Unlikely</td>
<td>15 – 20%</td>
</tr>
<tr>
<td>Realistic Possibility</td>
<td>25 – 50%</td>
</tr>
<tr>
<td>Probable/Likely</td>
<td>55 – 70%</td>
</tr>
<tr>
<td>Highly/Very Probable/Likely</td>
<td>75 – 85%</td>
</tr>
<tr>
<td>Almost Certain</td>
<td>&gt; 90%</td>
</tr>
</tbody>
</table>

The intentional gaps between the levels are to encourage analysts to be clear about what their assessments mean. Given the inherent uncertainty in the intelligence analysis business, this precludes a debate about whether something is at the lower end of one grade or the upper end of the one below it.