

How do we prevent the malicious use of technology? Can we?

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The problem(s) of the malicious use of technology

Three views:

1. A problem of control
2. A problem of competition
3. A problem of corruption

1. A problem of control

- There are good people and bad people
- The good people need to prevent the bad from using technology against them
- Requires extensive coordination and control, of both people and technology
- Example: government control of exports

2. A problem of competition

- You have to 'stay ahead' of those who would wish to use technology maliciously (or who would stop you from using technology maliciously)
- Focus on advancing technology or using it in innovative ways
- Examples: military/industrial complex; GCHQ after the Cold War

3. A problem of corruption

- Humans cannot be trusted with weapons
- Failing the elimination of all weapons, strive to eliminate the most dangerous:
 - nuclear, chemical, biological
 - land mines, cluster bombs...

This is a wicked problem

- have multiple definitions, and each definition contains its own preferred solution;
- are persistent and insoluble;
- are often symptoms of another problem;
- have little room for trial and error;
- contain contradictory certitudes;
- tend to have redistributive implications for entrenched interests.

Rittel, H. W. J. and Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2):155-169.

Other wicked problems

climate
change

town
planning

definition of a
polyhedra

natural
disasters

disease
propagation

raising
a family

river
management

Ways to address wicked problems

- Use one definition of the problem
 - ↳ Bound to fail
- Allow each definition to flourish

Ways discourses interact

- isolated co-existence
- collaborate
- dominate
- “muddle through”

What happens in the interaction

- irrelevant knowledge
 - discourses talk past one another
- “uncomfortable knowledge”
 - discourses undermine each other


It's not all talk!

- There is a world that interacts with us
 - Surprises
- But what do we make of it?
 - Evidence, like statistics, is a slippery thing

So it's all about knowledge, right?

- It depends on how we construct our knowledge...
- ... but also how we construct our ignorance!

Unknown knowns



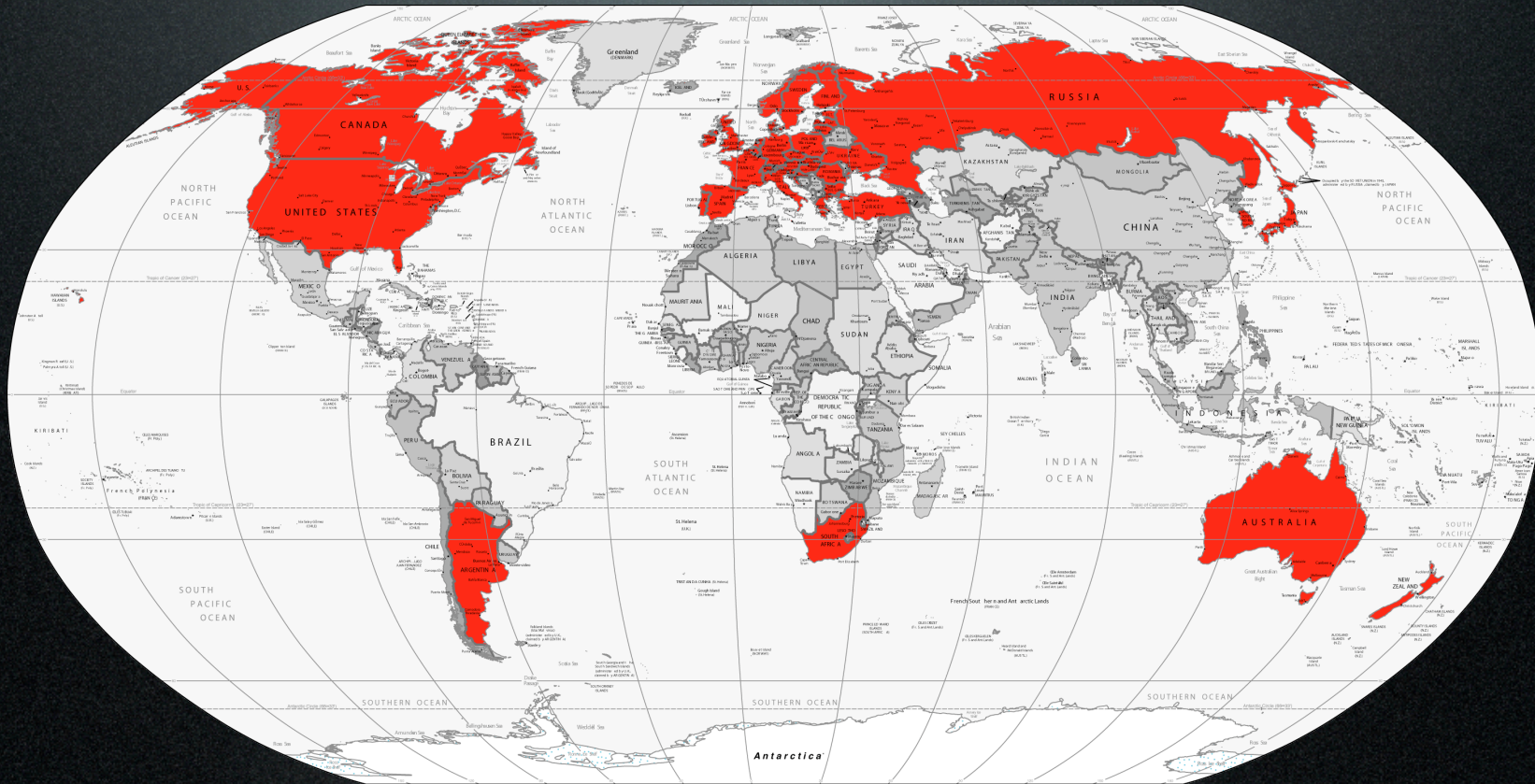
Who is
the 'we'?

- known knowns: the things we know we know
- known unknowns: the things we know we don't know
- unknown unknowns: the things we don't know we don't know
- unknown knowns: the things we don't realise we know

Time for an example:

- The problem: military technology distribution around the world leads to destabilised countries and regions
- The solution: control the flow of technology to regions of concern

The Wassenaar Arrangement (et al)



Irrelevant knowledge

- market share
- impact on environment
- effect of technology on poverty, health, economy*

* except when engaged in economic warfare

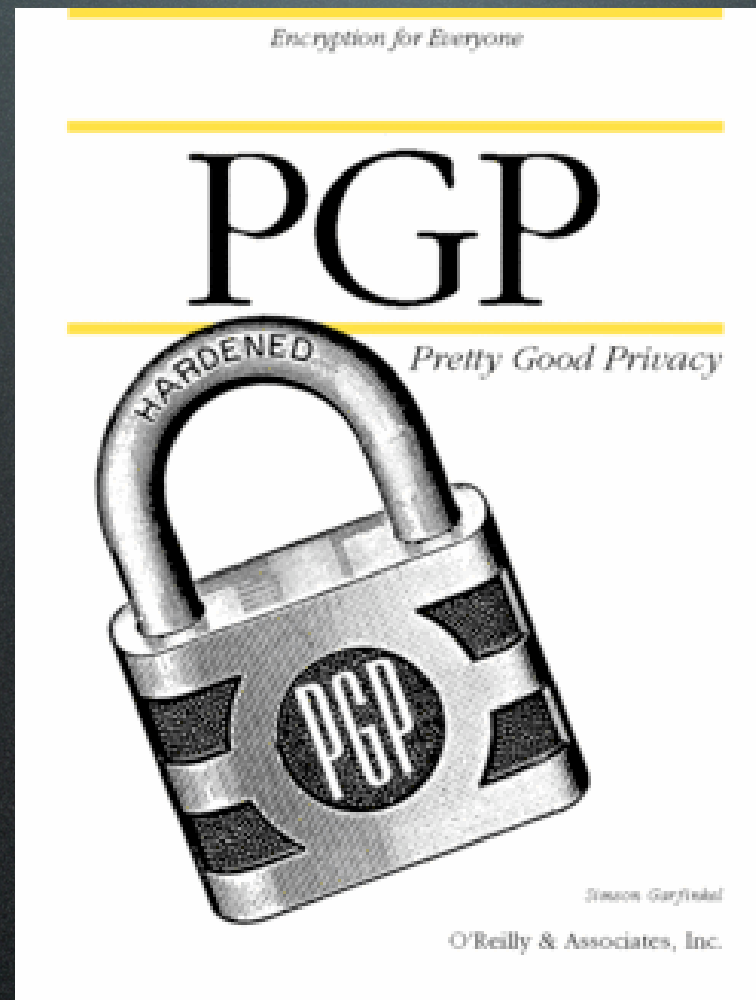
Uncomfortable knowledge

- Knowledge that the technology cannot be controlled:
 - computers
 - encryption
 - fertilisers
 - even explosives (e.g. road workers)

Computers



Encryption



So what do we do?

- Swing with the times:
 - more technology developed in private sector than military now
 - global trade breaks down borders
 - don't know all technology that may be used maliciously

Didn't use to be that way

- CoCom:
 - clearly defined enemy
 - simple lists of technology to control
 - most advances in technology in government labs

Other example: the economy

- Can be seen as an oscillation between markets and hierarchies over the last 100 years.
- (but I'm no expert on this topic!)

Questions?

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