

ADAPTATION IN AN ENVIRONMENT OF TERROR

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ASPIRATIONS OF ISLAMIC STATEHOOD



‘Only Islamic values and morals, and Islamic teachings and safeguards, are worthy of mankind.

These provide a permanent and true measure of human progress. Islam is the real civilization and Islamic society a truly civilized community.’

‘Milestones’
by Sayyid Qutb (1964)

Knights Under the Prophet's Banner



‘We must inflict the maximum casualties against the opponent, for this is the language understood by the West, no matter how much time and effort such operations take.’

**Dr. Ayman Al-Zawahiri,
al-Qaeda chief strategist**

ASYMMETRIC WARFARE

*The characteristics of **asymmetric warfare** are that the instigator has a disproportionate advantage gained by exploiting dissimilar values, strategies, and capabilities, and capitalizing on perceived weaknesses.*

[UK Ministry of Defence]

Al-Qaeda operates in 92 countries.

***As agents of trans-national terror,
these terrorists act as parasites on globalization.'***

Magnus Ranstorp, Director, CSTPV

FOLLOWING THE PATH OF LEAST RESISTANCE

“Now an army may be likened to water,

for just as flowing water avoids the heights and hastens to the lowlands,

so an army avoids strength and attacks weakness”.

Sun Tzu



Democracy is the modern malady of our time.

It exists in countries, such as the United States, who from their very founding arrogantly claimed that,

*‘There is no God but Liberty,
and Justice is her only Prophet’*

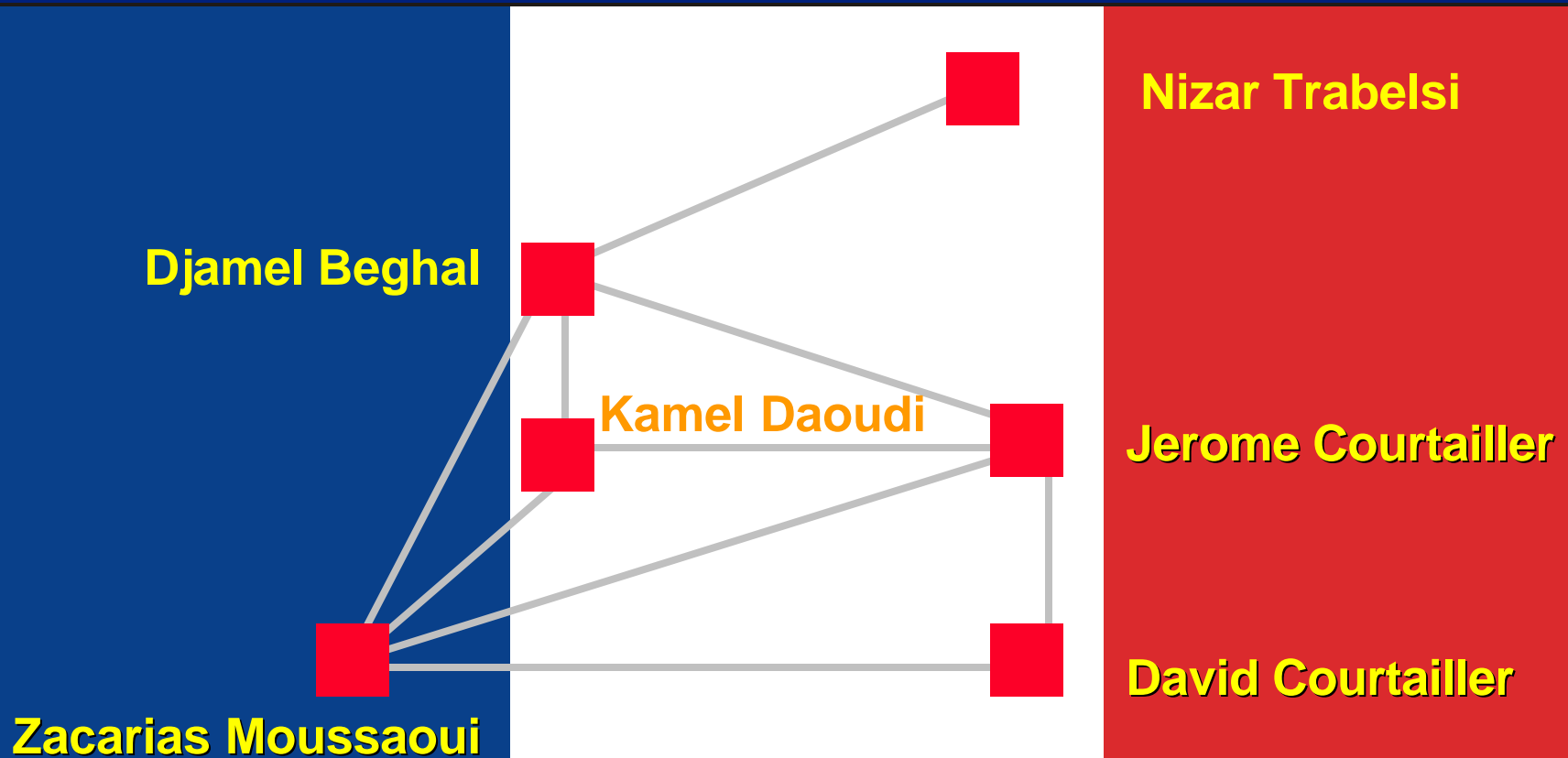
as was mouthed by Thomas Jefferson.

*Abu Hamza (2001)
Allah's Governance on Earth*

*“Abu Hamza is a scholar and he gives his Islamic views;
he has done no terrorist activities here”.*



The Finsbury Park **French Connection**



CYBERNETICS PRINCIPLE APPLIED TO TERRORISM:

ASHBY'S LAW OF REQUISITE VARIETY

If a defender's move is unvarying, then the variety in outcomes will be as large as the variety in the attacker's moves; only variety in the defender's moves can force down variety in the outcomes.

'It is a feature of a democracy that a security service will follow a new security threat rather than foreseeing it'.

*Stella Rimington,
former Director-General MI5*

ISLAMIC POLITICAL RETRIBUTION



**On Christmas Eve, 1994,
Algerian Islamic terrorists
hijacked an Air France jet,
with the intention of crashing it
into the Eiffel Tower in Paris.**

**France has been targeted because
it has actively propped up secular
anti-Islamic governments
in North Africa.**

Self-Organized Network of Intelligence?



As far back as 1996, anti-US Afghan waiters in London were soliciting American signatories for flight training in the USA.



Kerim Chatty also took flying lessons in USA in 1996.

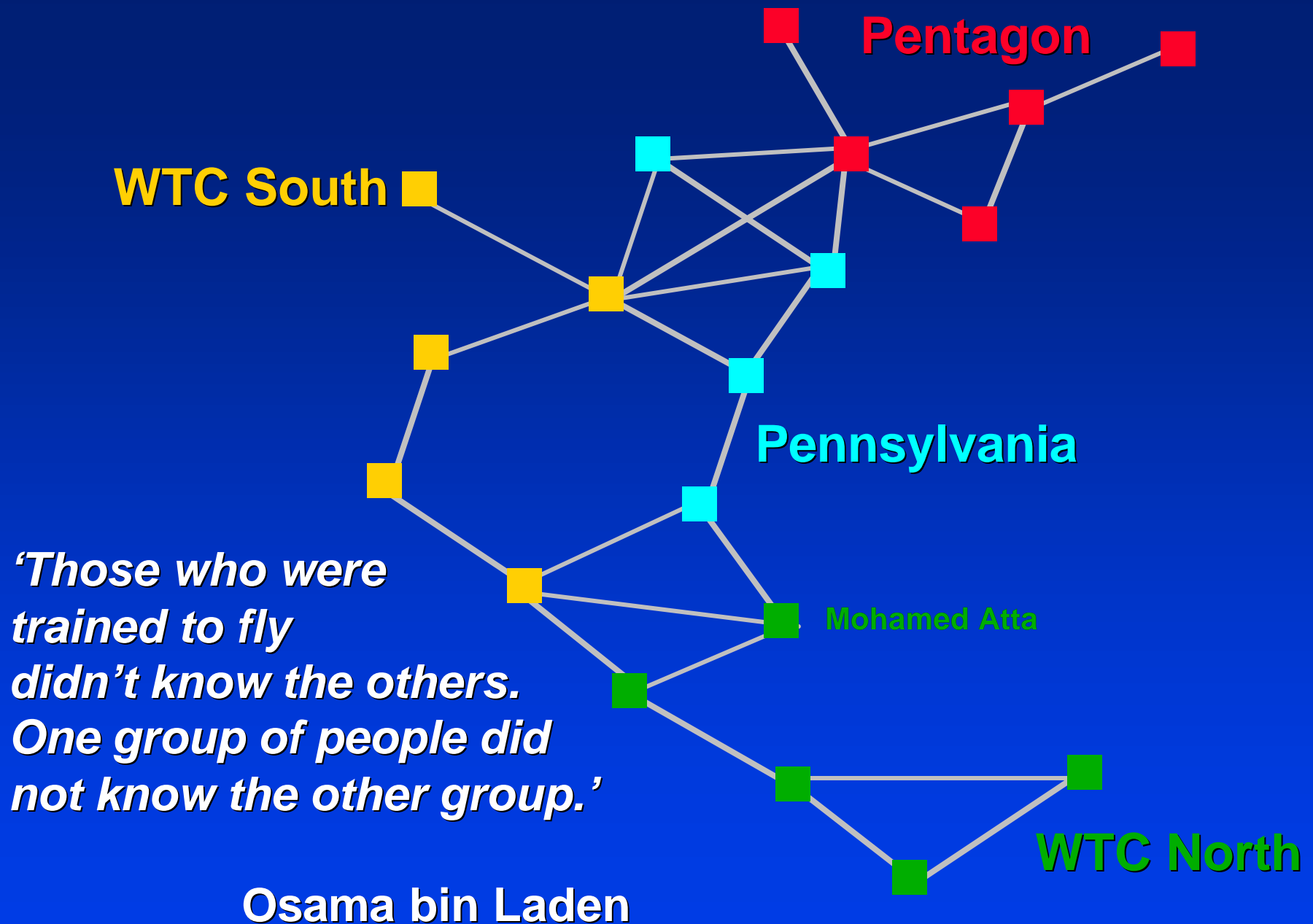
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Parisian magistrate Jean-Louis Bruguiere has compared al-Qaeda to an adaptive virus.

What adaptive measures are al-Qaeda operatives taking to preserve their terrorist network against counter-terrorism action?

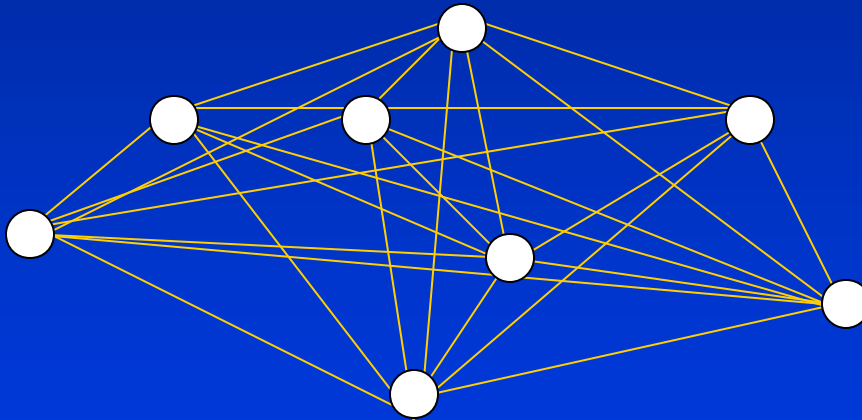
Efficiency is traded for secrecy.....



SWARM INTELLIGENCE NETWORK

The effectiveness of the attacks which a terrorist group might be capable of launching depends much on the structure of its organization.

The less centralized and hierarchical, the more resilient the organization will be to counter-terrorist action.



Complex feats
of spatial
intelligence
are achievable
in networks.

As key nodes are removed by counter-terrorism forces, the network gaps are filled.

THE EMPIRE STRIKES BACK

From the bombing of the Khobar Towers in Saudi Arabia in 1996, to the Nairobi and Dar-es-Salaam US embassy bombings in 1998, to the bombing of the U.S.S. Cole in 2000, and the WTC disaster of 2001, al-Qaeda has developed a swarm-like campaign of pulsing attacks from different nodes of its global terrorist network.

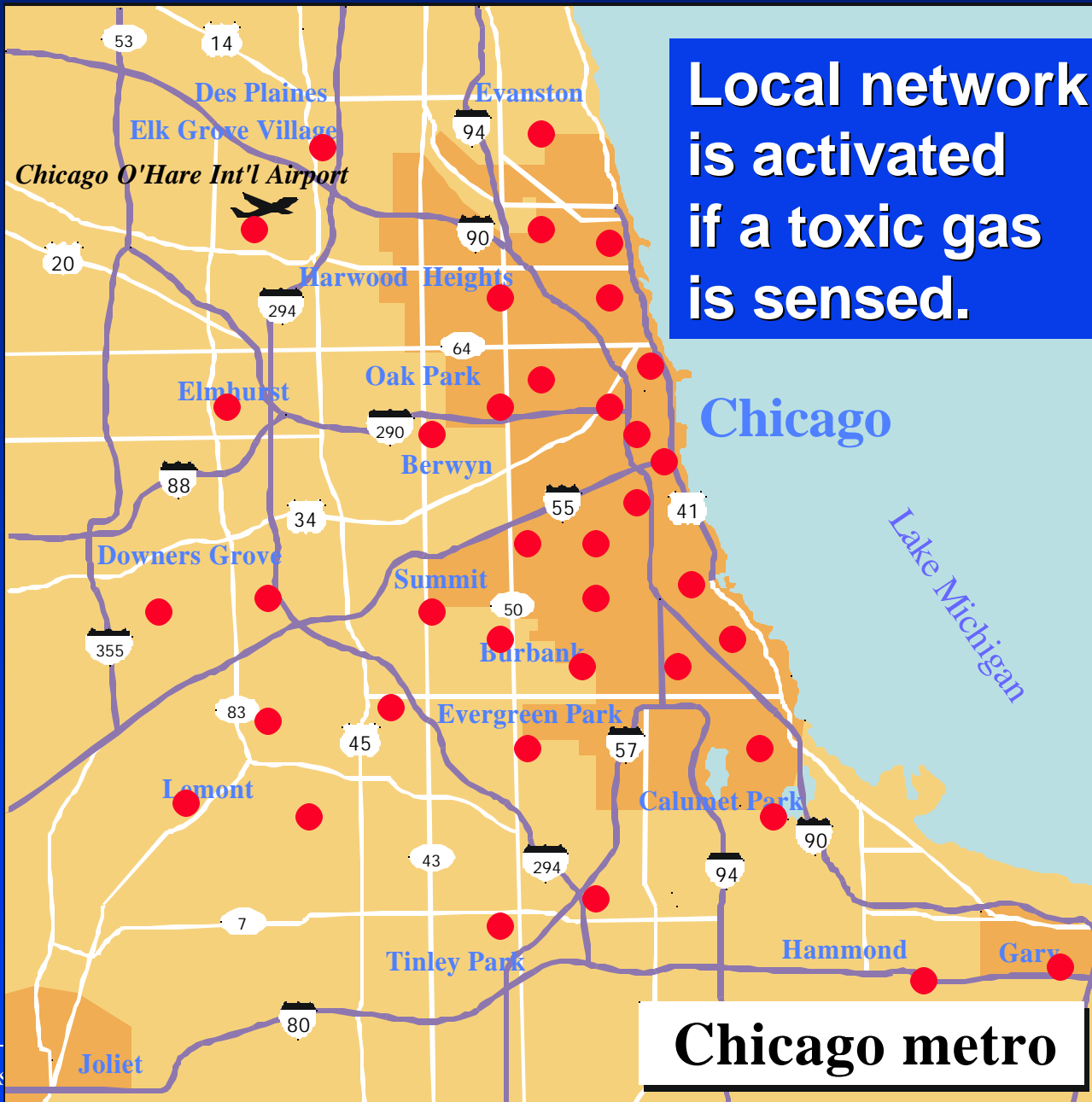


SWARM INTELLIGENCE

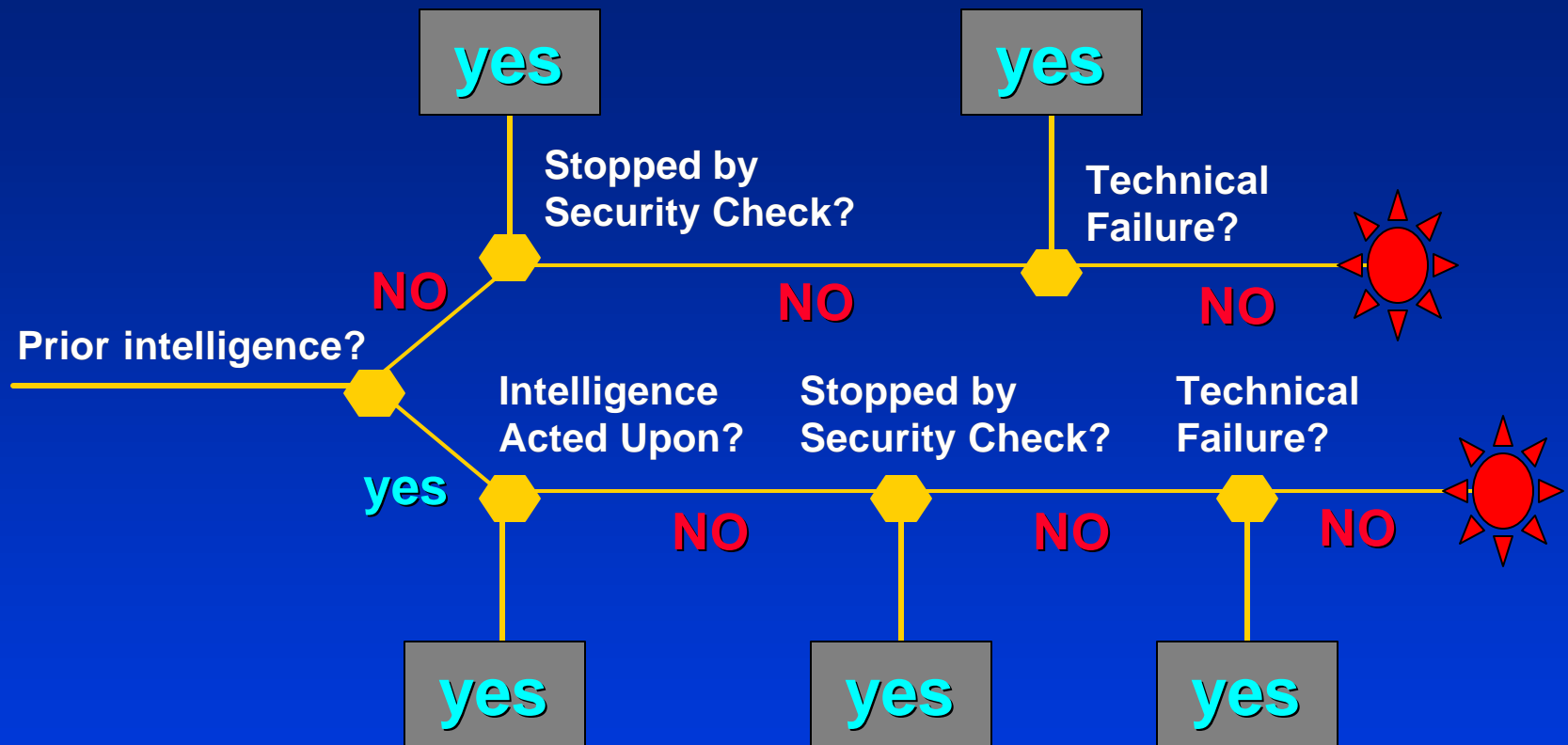
- ❑ Theory developed in the context of robotic systems, and extended to cover the collective behavior and organization of social insect colonies.
- ❑ In these spatially intelligent systems, autonomy and distributed functioning replace control and centralization. Agents may appear to have their own local agenda, yet there is a high level of global organization.



FIGHTING NETWORKS WITH NETWORKS

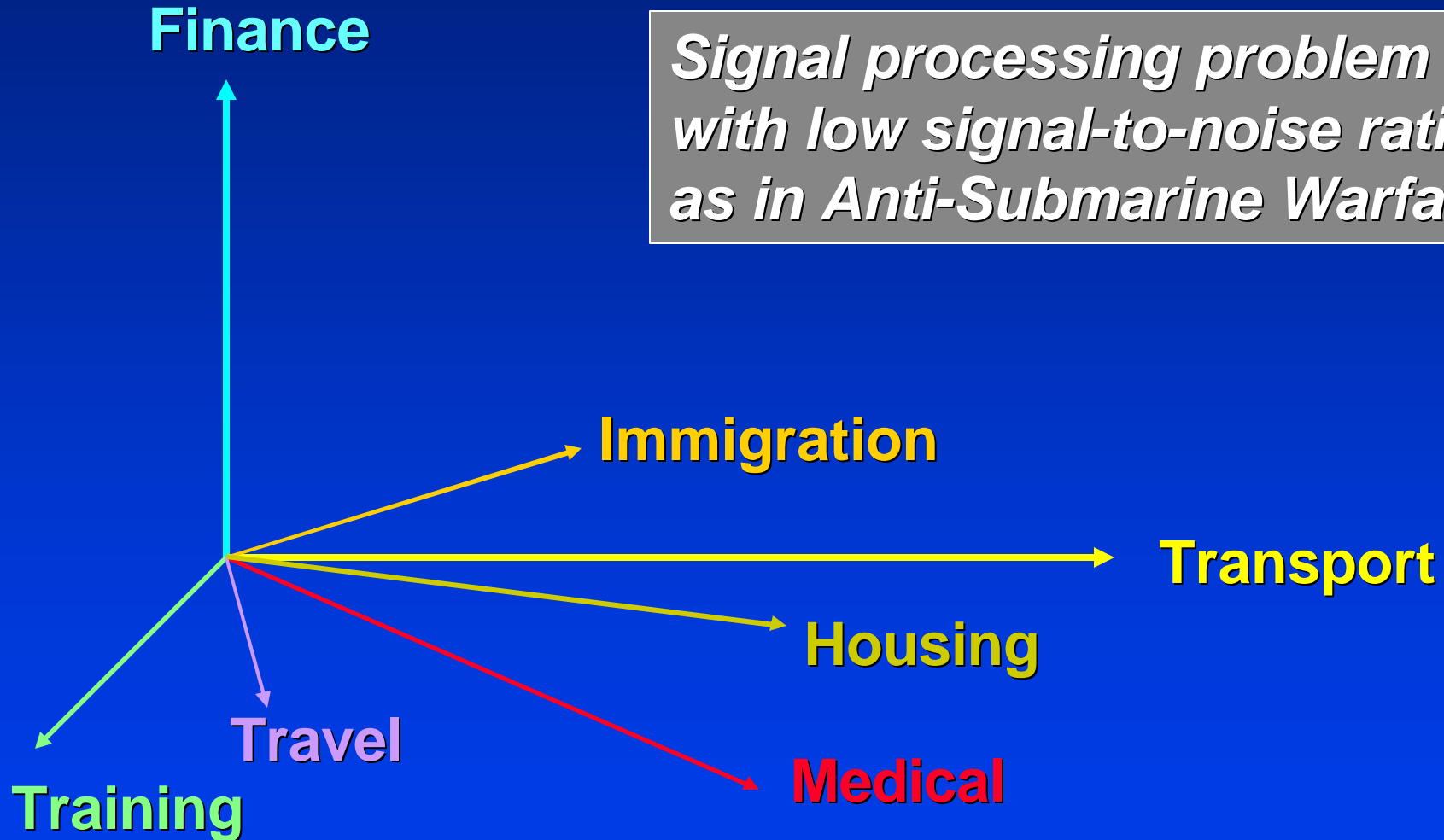


EVENT-TREE FOR MISSION SUCCESS



Each branch is assigned a probability weight. By considering all branches, the overall probability of mission success can be enumerated.

SEARCHING FOR ANOMALIES IN THE TERRORIST TRANSACTION SPACE

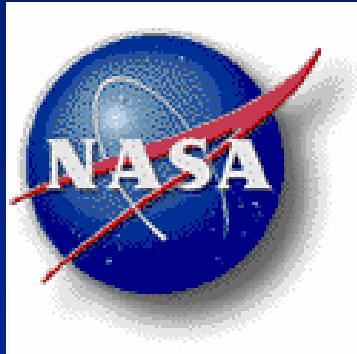


AI-QAEDA OBJECTIVES

*'It is the duty of Muslims
to prepare as much force
as possible to attack
the enemies of God.'*

*'We call on every Muslim
to kill the Americans
and plunder their money
wherever and whenever
they find it.'*





GAME THEORY & HOMELAND SECURITY

*“I will force the enemy to mistake
our strength for weakness,
and our weakness for strength,
and thus will turn his strength into weakness.”*

Sun Tzu

The Art of War

Game theory concepts apply to natural hazard PRA, in circumstances, such as the joint maintenance of flood defenses, where individuals incur costs to increase system reliability, which is interpreted as a public good.

Plugging a gap in a dike is an individual act which may save all from flooding.



GAME THEORY ASPECTS OF CONFLICT

- ❑ Randomization of alternative strategies
- ❑ Adaptation of attack according to enhanced defensive security measures
- ❑ Sensitivity to substantial target hardening



*Thinking one move ahead:
the anti-Taliban Afghan
leader Massoud was
assassinated 2 days
before September 11*

MANCHESTER AL-QAEDA TRAINING MANUAL

'The main mission for which the military organization is responsible is the overthrow of the Godless regimes and their replacement with an Islamic regime.

Other missions consist of the following:

Blasting and destroying the places of amusement, immorality and sin; not a vital target.

Blasting and destroying the embassies and attacking vital economic centers;

Blasting and destroying bridges leading into and out of the cities.'

RECONNAISSANCE

SURVEILLANCE

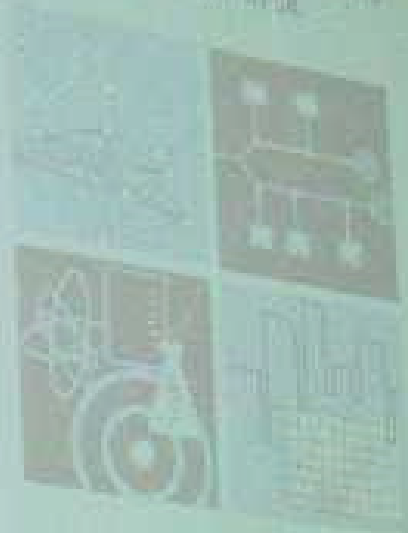
REHEARSAL

Osama bin Laden

Dr. ROHAN GUNARATNA: AUTHOR OF: **'INSIDE AL-QAEDA'**



Understanding and Managing Terrorism Risk



January 10, 2011
London and New York & Japan
10:00-11:00

10:00

Fechner's Law:

$$\text{Log}\{U[C, T]\} = k_0 - k_1 C - k_2 T$$

Fractal Defense Saturation Condition:

$$\frac{\partial P_D}{\partial D} \propto -U[C, T]^{-l} \quad (l > 0)$$

Minimization of Sensitivity of Mission Success to Defense Uncertainty:

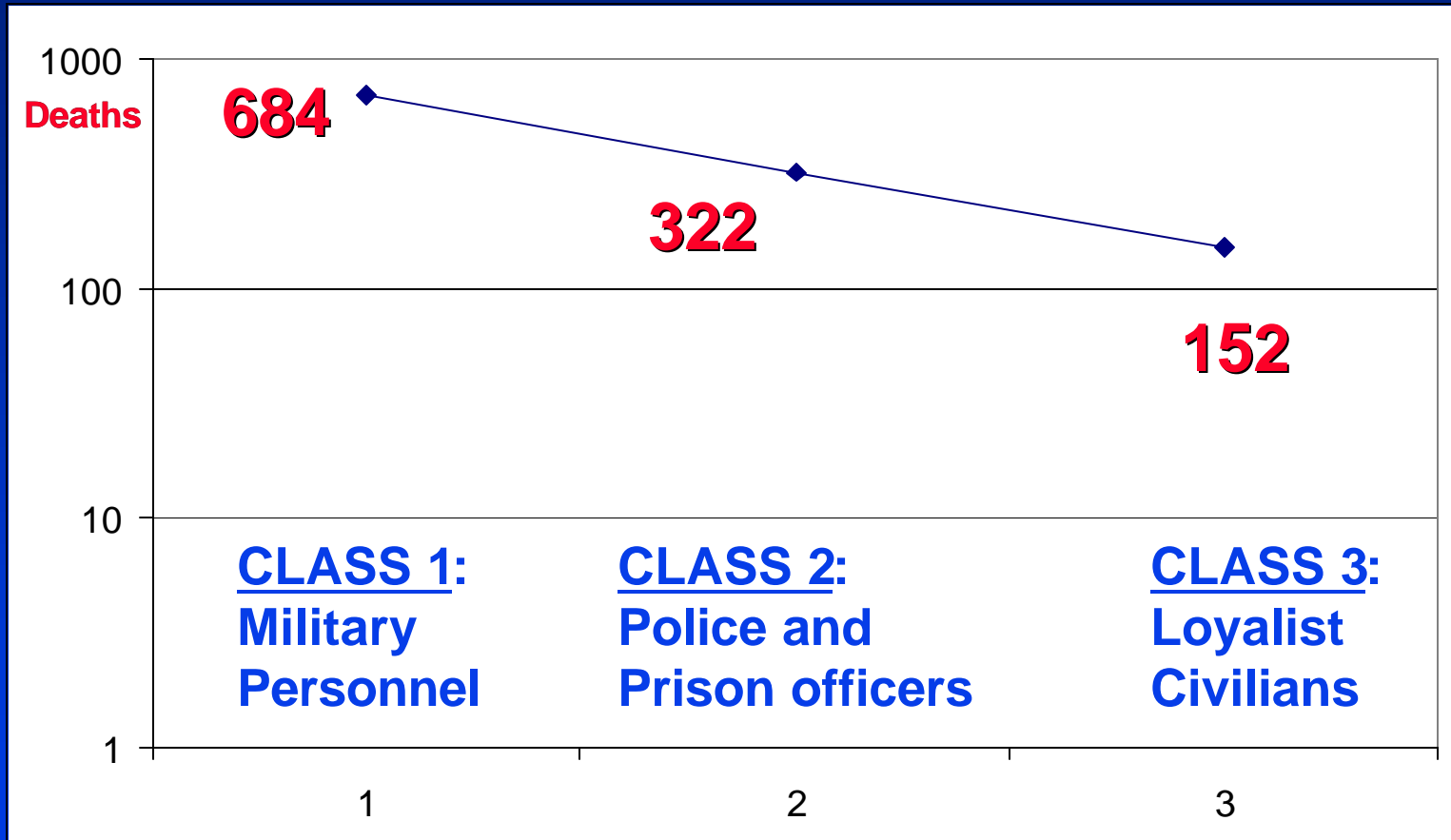
$$1 / P(U[C, T]) \propto -U[C, T] \frac{\partial P_D}{\partial D} \propto U[C, T]^{1-l}$$

Target Prioritization Law:

$$\text{Log}\{P(U[C, T])\} = a - b_1 C - b_2 T$$

TARGET SUBSTITUTION IN NORTHERN IRELAND

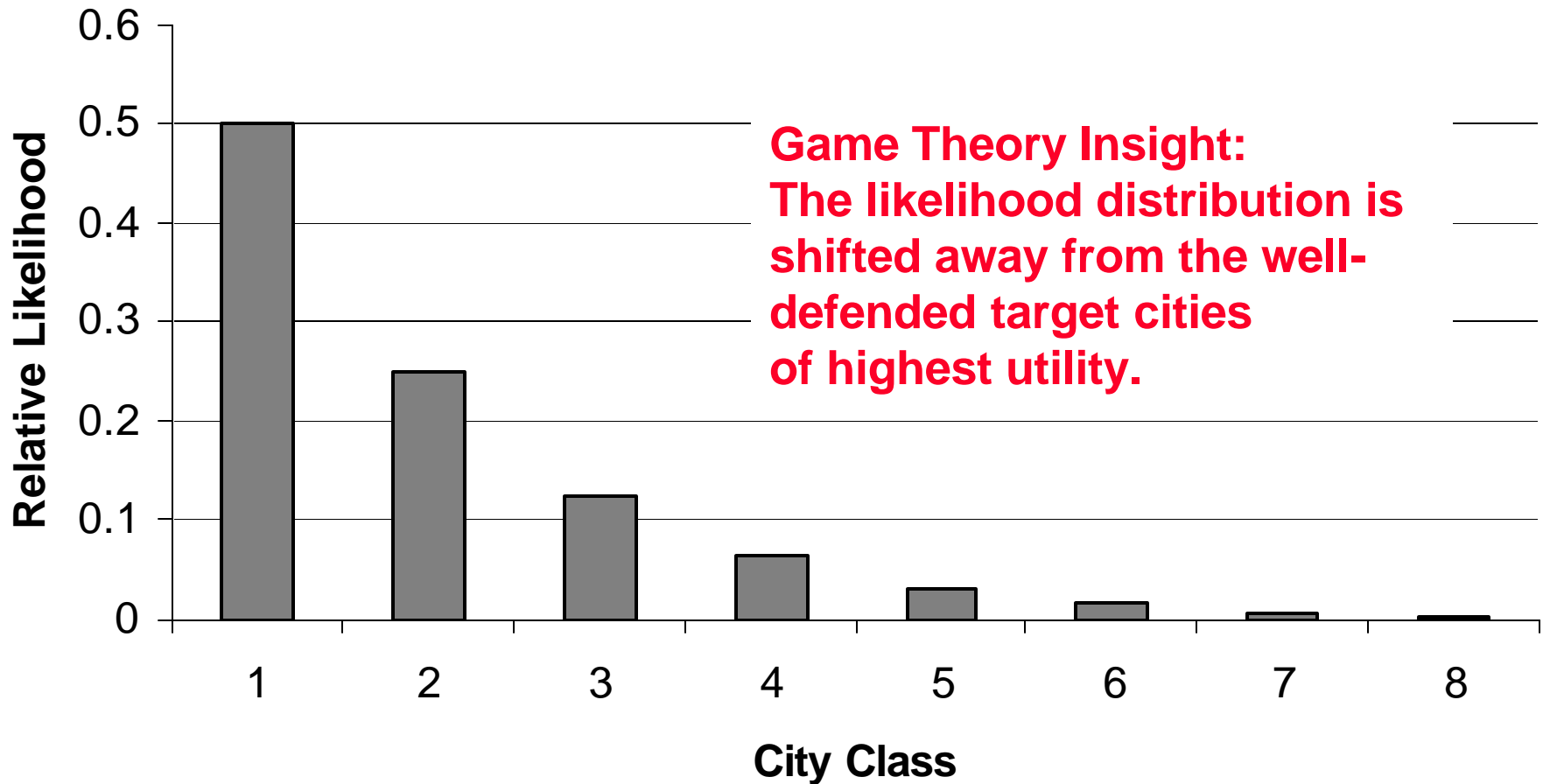
IRA killings from the start of violence in 1969 until 1993, shortly before the ceasefire.



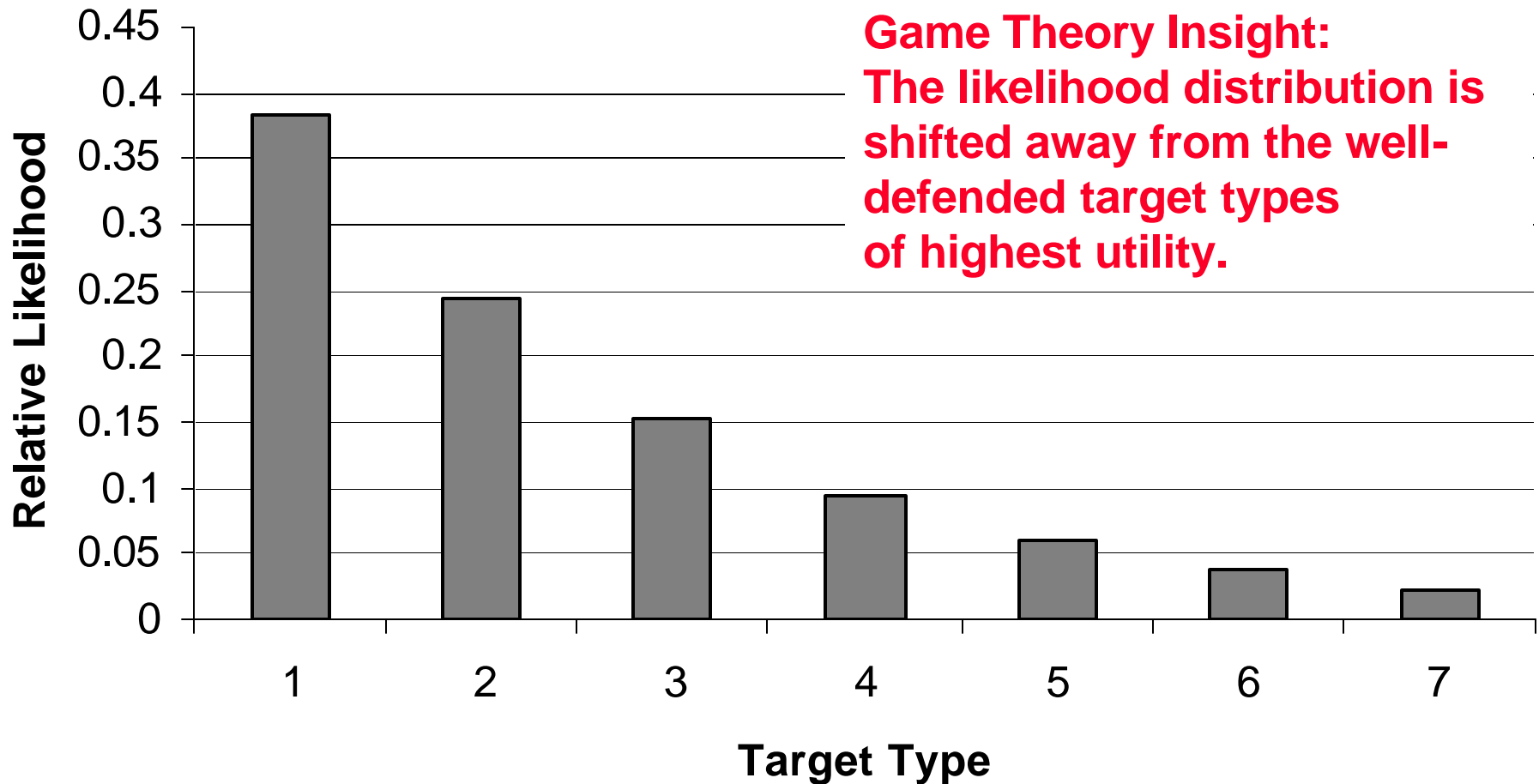
IRA comment on target selection:

'We would prefer to be hitting Brits than cops, because of the need to focus on British rule, but because of their body armour...'

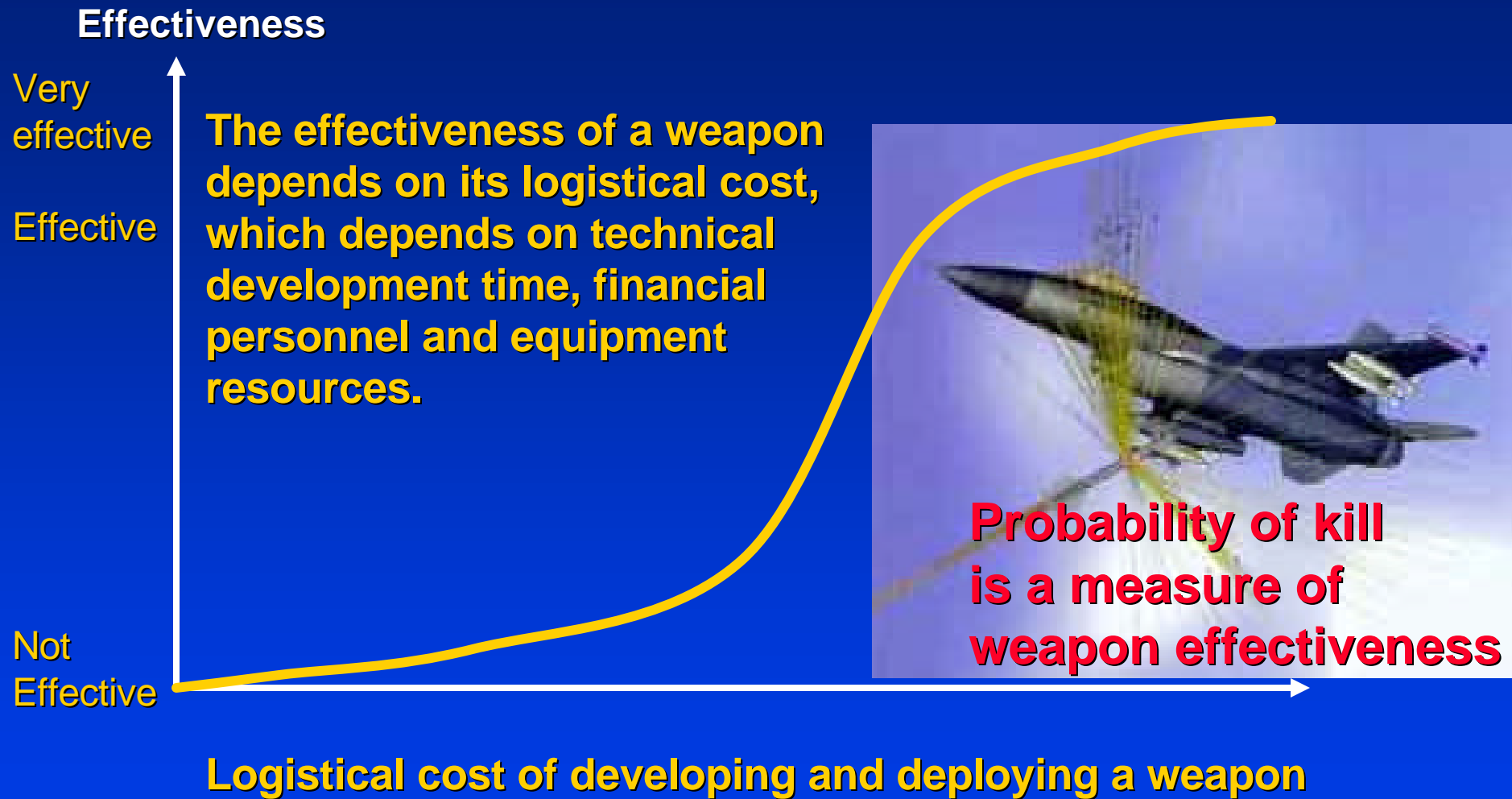
PROBABILISTIC RANKING OF TARGET CITIES



PROBABILISTIC RANKING OF TARGET TYPES



WEAPON EFFECTIVENESS CURVE



General Level of Security and Threat Awareness in USA



MACROTERRORISM AS A STATE-SPACE PROCESS



$$\Pr(\text{attack} \mid t) = \Pr(\text{attack} \mid S[1], S[2], \dots, S[k], t)$$

Where the states $S[1] \dots S[k]$ describe
expenditure on national security;
restrictions on civil liberties;
tightening of border and identity controls;
public awareness of terrorist threat; etc..

Major event can trigger state transition

STOCHASTIC SIMULATION



Choose a Weapon Mode



Select the Number of Synchronized Attacks

Assign Weapon Size and Effectiveness

Identify the Level of Intelligence and Target Security



If Security Regime is not too Oppressive
Pick a Target for Each Individual Attack

Evaluate the Loss Consequences