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# Combating Terrorist Networks

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# Al Qaeda and its Subnets

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- Short background on the problem
- Al Qaeda as *a* terrorist organization that developed out of support efforts in violent insurgencies
- Al Qaeda as *a viral organization*
- The challenge of stopping the spread of Al Qaeda: Network-Based Approaches



# The New Threat Environment

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The new threat environment consists of:

New organizations of people, resources, and information, tied together by new technologies in organizations exhibiting a network structure.

This network structure improves the flows of those resources, information, material and personnel across national boundaries.



# Arquilla and Ronfeldt's Netwar Definition

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Netwar: an emerging mode of conflict (and crime) at societal levels, short of traditional military warfare, in which the protagonists use network forms of organization and related doctrines, strategies, and technologies attuned to the information age.

--Networks and Netwars, 2001



# Arquilla and Ronfeldt's Netwar Thesis

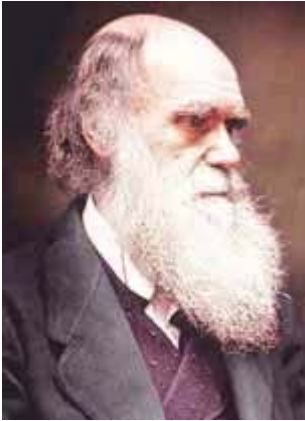
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The strongest networks will be those in which the organizational design is sustained by a winning story and a well-defined doctrine, and in personal and social ties at the base. Each level, and the overall design, may benefit from redundancy and diversity. Each level's characteristics are like to affect those of the other level.



# An Evolutionary Perspective?

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Survival of the Fittest?

Punctuated Equilibrium?





# Questions

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Would an “evolutionary perspective” on the development of terrorist network be a useful approach?

Common Properties:

Dynamic Change

Importance of Resources and Efficiency

System Complexity (Ecological Competition)

Caveats: Organizations are not organisms.

Organisms can identifiably “die.”

Organizations can acquire properties of other organizations.





# And More Questions

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What role did the organizational structure of Al Qaeda play in its success?

How did Al Qaeda gain allies such as Jemaah Islamiyaa and groups in Africa?

How did they induce them to conduct local bombings of U.S. targets?



# Asymmetric Threats Before 2000



The breakup of the Soviet Union significantly changed the nature of threats to U.S. national security. U.S. intelligence and military strategists identified “asymmetric threats” as a growing and significant danger beginning in the early 1990s .

At this time, terrorist organizations were characterized as small in size with limitations of resources, personnel and knowledge base. Virtually all of these were focused on achieving local or regional goals.

State sponsorship of violent groups was the chief concern of military and intelligence communities.



# Insurgencies Vice Terrorist Groups

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- (1) Insurgents engage in a *range* of activities, most notably guerrilla warfare, but also political mobilization and attendant efforts to attract support from abroad
- (2) Terrorism in this context is a specific tactic that insurgents use as part of a broader strategy to control a particular geographic area. . . that is, terrorism is an auxiliary mode of violence rather than an exclusive one
- (3) Insurgencies frequently have hundreds or thousands of members; terrorist groups tend to be much smaller.



# How did Al Qaeda become a global threat?

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- Insurgencies are usually LOCAL
- Often funded by neighboring states
- Use a combination of conventional military forces, paramilitary/militia structure, with some guerilla/terror acts against civilians



# Development of Al Qaeda



## 1979-1989 Soviet-Afghan War

- Not a unified struggle (typical insurgency)
- Islamic international community becomes increasingly engaged in the early 1980s
- Development of the MAK (Afghan Services Bureau)



# MAK to Al Qaeda



In 1984, Dr. Abdullah Azzam and Osama Bin Laden create MAK to aid Arab fighters in the Soviet Afghan War

Train between 25 to 50 thousand non-Afghan recruits

1986 : Bin Laden establishes Al Masadah ("The Lion's Den"), a training camp for Persian Gulf Arabs. Bin Laden begins associating with Egyptian radicals -- who, unlike Sheik Abdullah Azzam, advocate a global jihad beyond Afghanistan -- and befriends Dr. Ayman al-Zawahiri of the Egyptian Islamic Jihad.



# From Threats to Threat Networks

U.S. pressures on nation states to end sponsorship of terrorist organizations initially caused problems for these groups. However, they were able to adapt.

- Movement of headquarters and dispersion of people and assets to a handful of haven-states fostered familiarity and cooperation
- Social ties between groups were established and became increasingly important.
- **Cooperation between groups began to coalesce into a network organization.**



*osama bin laden*



# From MAK to Al Qaeda

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1989: Al Qaeda created, conflicts over control of the MAK resources. Car bomb kills Azzam

1991: Bin Laden leaves Saudi Arabia and travels to Afghanistan with some of his supporters.

Al Qaeda members sent to Southeast Asia and other areas of Islamist insurgency -----→ WHY?





# Al Qaeda and Jemaah Islamiya

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## Why Southeast Asia?

Long history of struggle for Islamic state

Existing Islamist guerilla groups plentiful

“Islamist revival” fueled by successes of the Soviet-Afghan War

Large population base educated in *madrasah* schools

Many contacts



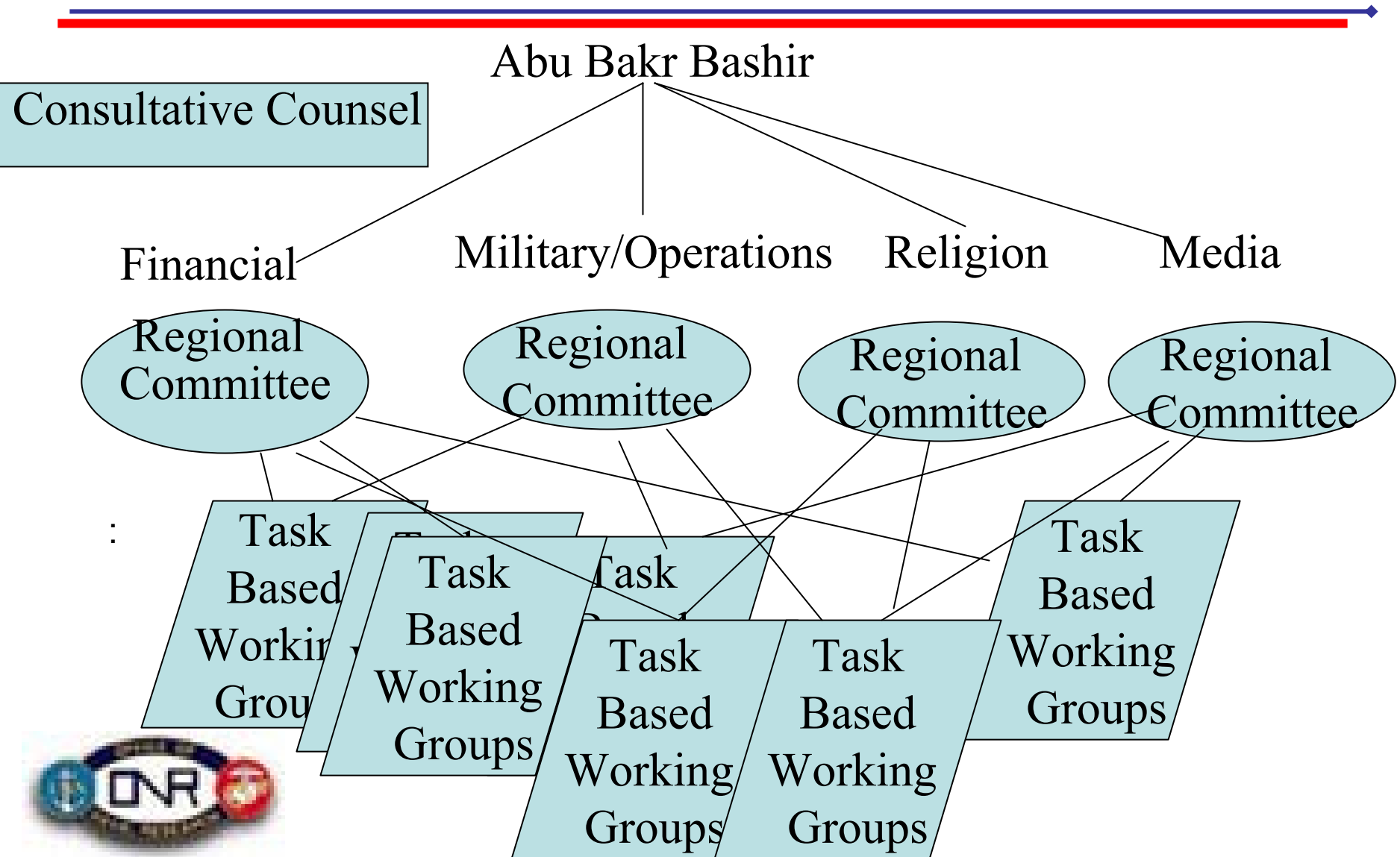
# Jemaah Islamiyaa

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- Established 1996(?) by Abdullah Sungkar (d.1997) and Abu Bakr Bashir



# Jemaah Islamiyya Structure



# Al Qaeda Structure (Upper Tier)

Consultative Counsel

Osama Bin Laden

Financial

Military/Operations

Religion

Media

Committee

Committee

Committee

Committee

Task Based Working Groups

Task Based Working Groups

Task Based Working Groups

Task Based Working Groups

Task Based Working Groups



# 1999: JI Transformation

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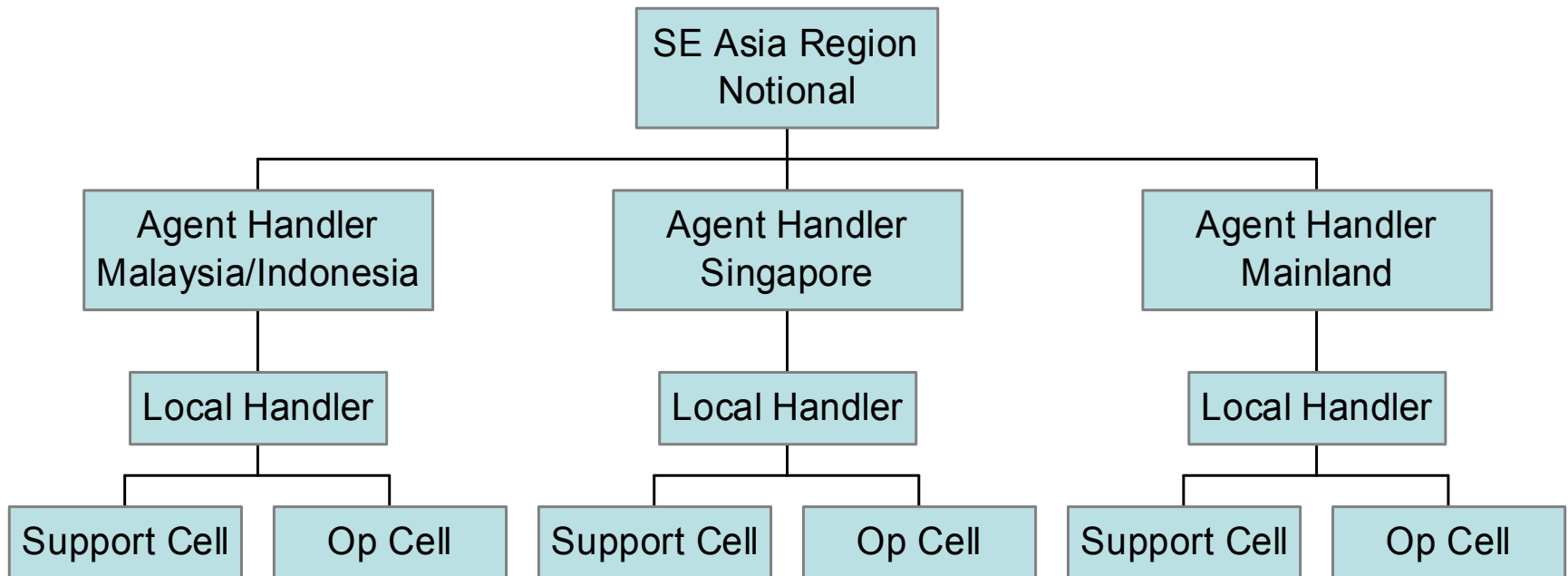


Riduan Isamuddin aka Hambali convinces the JI leadership to change all committees and direct them to the task of supporting and promoting terrorist activities



# Al Qaeda Operational Structure

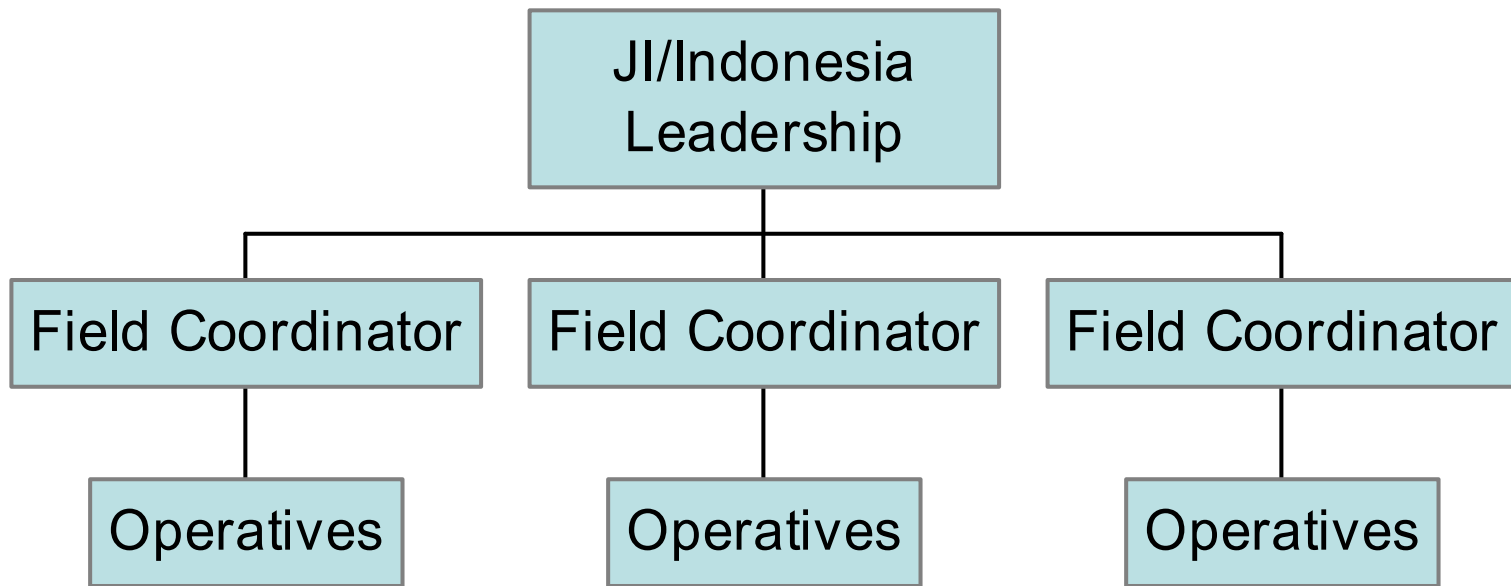
## Two Tiered Cell System



# JI Operational Structure

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## Transformed JI



# Social Network Analysis Approaches

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- Model driven, validatable
- Explain how to attack networks relationships
- Connected to recent critical advances in network analysis and general theories of network dynamics
- Can be used to explain real social behavior and predict structural changes





# Bali Bombing 2002

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# Al Qaeda as a Viral Network

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Main method of spreading: creation of “imperfect replicas”

\*constant mutation\* / adaptation to local conditions

Al Qaeda “prime” is protected by multiple subnets that help to mask the point sources of the “main infection” --its professional, high-quality operatives

Imperfect replicas can be highly local (Al Ansar), national, or regional  
Need for regional approaches and for NETWORK approaches to discover destabilization methods



# The Subnet Advantage

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What does Al Qaeda get out of the creation of subnets?  
Information and Local Knowledge  
Plans going upward for coordination and control  
Reputation  
Assistance with “Spectaculars”  
Protection / Early Warning ?

The subnet as a hedge



# Office of Naval Research Program: Social Network Analysis for Anti-Terrorism

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## Program Goals:

Develop improved tools for the analysis of critical warfighting networks

Develop novel approaches to the disruption of opposing networks



# Backups



# The Military Problem

**Military personnel deployed and stationed abroad are particularly vulnerable to terrorist attacks.**



**USS Cole, October 2000**



**1983, Lebanon  
242 Marines and Sailors killed**

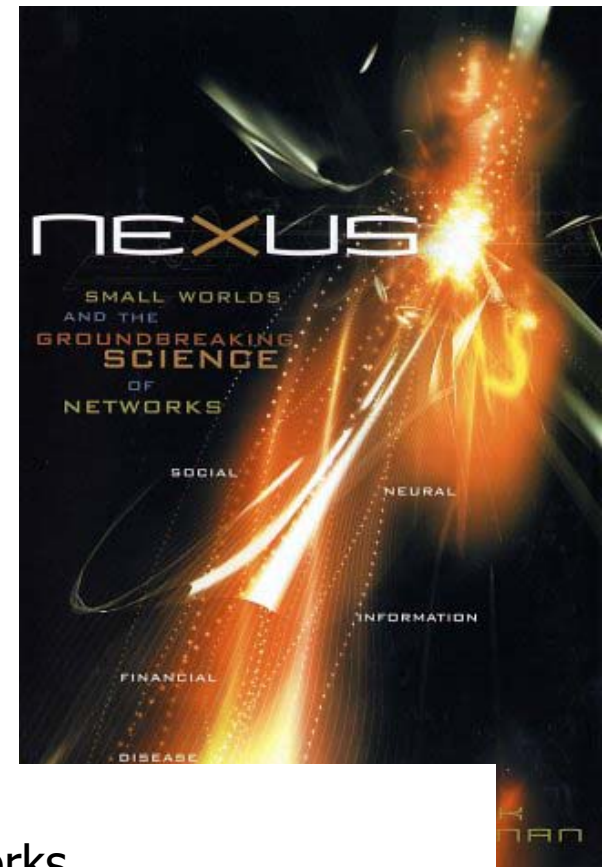
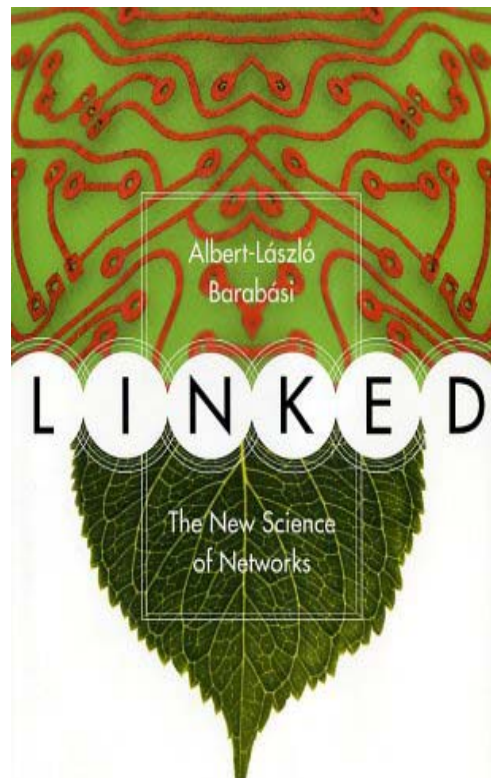
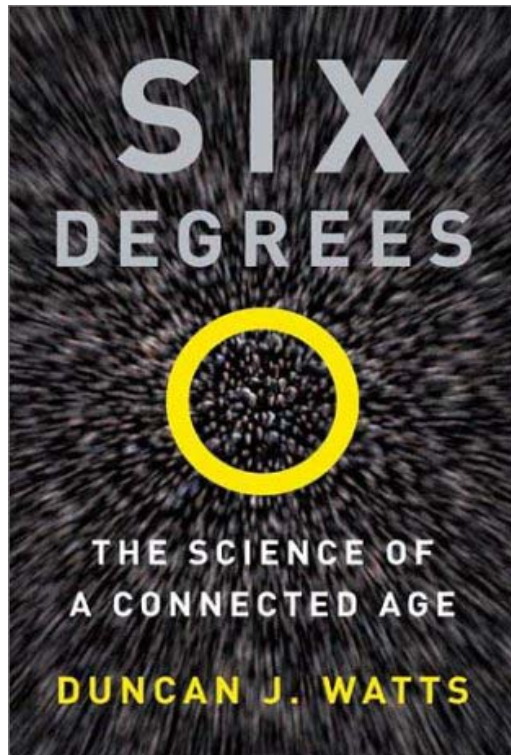


**1993, Saudi Arabia  
19 servicemen killed,  
hundreds wounded**





Recent developments in the study of network dynamics have generated a rapid expansion in research opportunities in modeling complex, adaptive systems



These developments are capable of rapidly improving:

- The modeling of both large and small-scale social networks
- The identification of specific patterns of interest in network topologies
- The dynamics of network architectures over time and under different stressors

# The Benefits of a Network Approach to Social Problems

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ANY RELATIONSHIP that is dependent upon exchanges or connections between individuals can be mapped into a social network:

- World Economies
- Local Alliances
- Spread of Epidemics
- Tribal Conflicts

## WHY IS THIS USEFUL?

Social Network Models can simulate **highly complex problems** of human interaction using **statistically valid, computationally robust algorithms** that can assist decision makers in **evaluating courses of action.**





# Advantages of Network Organization: The Strength of Weak Ties

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Network organization reduced limitations of terrorist organizations and improving their robustness

- Augmentation of manpower
- Pooling of expertise and experience
- Improving access to critical resources
- Shortening critical paths to goals
- Creation of useful redundancies

**Result:**  
Network Organization  
Becomes a Force Multiplier

