

Effects Based Operations for Transnational Terrorist Organizations: Assessing Alternative Courses of Action to Mitigate Terrorist Threats



UN Headquarters Baghdad

Larry Wentz

Dr Lee Wagenhals

lwentz@gmu.edu

C3I Center, George Mason University
2004 Command and Control Research
and Technology Symposium

GMU

George Mason University



Study Objectives

- **Prototype a Decision Support System and associated procedures for its use by antiterrorism and counter terrorism analysts and planners (e.g., military and law enforcement agencies) involved in developing and assessing courses of action against transnational terrorist threats.**
- **Provide a consistent framework for integrating political, social, information, and economic influence and legal, law enforcement, and military actions and be able to trade off their contribution to combating transnational terrorism.**
- **Demonstrate the decision support system using case studies**

Study Motivation

- **Transnational terrorism is increasing and needs to be stopped**
- **Post 9/11 requires the development of multiple Courses of Action (COAs) to respond both quickly and effectively to unconventional adversaries that:**
 - **Employed asymmetrical techniques to achieve effects**
 - **Demonstrate the ability and will to inflict unacceptable damage upon our society even though that adversary does not possess technologically sophisticated resources**
- **The timing and use of a mix of lethal and non-lethal elements of national power are important to**
 - **Defeat terrorist organizations,**
 - **Deny state sponsorship and sanctuaries,**
 - **Diminish underlying conditions that terrorist seek to exploit and**
 - **Defend the US, its citizens, and interests at home and abroad**

Study Approach

- **Part I: Develop Understanding of Terrorism and Countermeasures**
 - **Web Searches**
 - **Literature Searches**
 - **Review MC-02 Experiences**
 - **Symposium/Workshops**
 - **Subject Matter Expert Discussions**
- **Part II: Conduct Case Study Analysis**
 - **Build Familiarity with the Use of CAESAR II/EB Tool**
 - **Build Some Counter Terrorism Models**
 - **Conduct COA Analysis**
- **Document Findings**

Background

- **“Terrorism”** Is the calculated use of
 - Covert criminal violence or threat of violence and symbolic acts to attract the media and reach a large audience
 - ...but is not common crimes, civil disturbances or spontaneous rioting
- **“Terrorist”** and **“Terrorism”** are emotive words, open to multiple (mis-) interpretations and abuse
 - **“Terrorist”** is typically used to refer to groups that predominantly use terrorism tactics.....e.g., bombings, shootings, and assassinations
 - ...but identical tactics are also often present in **“insurgency”** campaigns
- The concepts **“Terrorism”** and **“Insurgency”** are often incorrectly used interchangeably
 - Insurgents employ terrorism as a tactic and
 - Terrorists hope that their attacks will spark a genuine insurgent movement

**There are at least as many definitions of
Terrorism as researchers studying the issue.**

Terrorism Definitions

U.S. Department of Defense: **The calculated use of violence or the threat of violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.**

U.S. Department of State: **Premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.**

U.S. Federal Bureau of Investigation: **The unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.**

United Nations: **A unique form of crime. Terrorist acts often contain elements of warfare, politics and propaganda. For security reasons and due to the lack of popular support, terrorist organizations are usually small, making detection and infiltration difficult. Although the goals of terrorism are sometimes shared by wider constituencies, their methods are generally abhorred.**

The Point of Terrorism is to Terrorize

Terrorism Terms

- **Antiterrorism: Defensive and preventive measures taken to reduce vulnerability to terrorist attacks.**
- **Counter-terrorism: Offensive measures taken in response to a terrorist attack, after it occurs.**
- **Combating terrorism: The U.S. government program against terrorism that includes antiterrorism, counter-terrorism, and all other aspects of tracking, defense, and response to terrorism throughout the threat spectrum.**
- **Force Protection: The U.S. DOD program for the defense of military and government assets from terrorist and unconventional warfare attack—detect, deter, and defend.**

**Terms Used by Defense, Intelligence,
and Law Enforcement Communities**

Terrorist Considerations

- **Terrorist goals/objectives**
 - Recognition, coercion, extortion, intimidation, provocation, and insurgency support
 - Create a climate of fear in a targeted group or nation through a sustained campaign of violence
 - Destroy social or political order through the destruction of commerce, property or infrastructure
 - Ensure government overreacts and oppresses its own people
- **Terrorist prefer simple strategies**
 - Media dependent to transmit fear and publicize cause
 - Dramatic impact through the use of speed, surprise, and violence of attack
 - Planning and execution times range from a few hours (hasty) to weeks (normal) to months and even years (deliberate)

**The terrorist need to get luck just one.
Antiterrorist forces must be lucky all the time**

Terrorist Considerations (Cont)

- **Terrorist motivators**
 - **Rational: Thinks through goals and options**
 - **Psychological: Dissatisfaction with life and accomplishments**
 - **Cultural: Fear of cultural extermination**
- **Terrorist organization**
 - **Security primary concern: Best served by cellular structure**
 - **Support structure: State-sponsored and/or sympathizers**
 - **Use both direct and indirect means of communicating**
 - **Training varies considerably: Military style at sophisticated facilities to inspirational talks before activation— “throw away” operatives**
- **Terrorist tactics**
 - **Hijackings, kidnappings, bombings, assassinations, and armed assaults**
 - **Attack critical infrastructure or capabilities, popular or high-profile individuals, or important facilities or symbols**
 - **Use weapons of mass destruction and effects (CBRN, suicide bombers,..)**
 - **Attack both strategic and tactical targets worldwide**
 - **Exploit media**
 - **To gain public attention, publicize a cause, influence and spread fear**
 - **As an unsophisticated form of terrorist ISR**

Combating Terrorism

- **U.S. National Strategy Goals:**
 - **Defeat terrorists and their organizations through the direct and indirect use of diplomatic, economic, information, law enforcement, military, financial, intelligence and other instruments of power.**
 - **Deny Sponsorship, Support, and Sanctuary to Terrorists**
 - **Diminish the Underlying Conditions that Terrorists Seek to Exploit**
 - **Defend U.S. Citizens and Interests at Home and Abroad**
- **Success dependent upon sustained, steadfast, and systematic application of all the elements of national power—diplomatic, economic, information, financial, law enforcement, intelligence, and military—simultaneously across four fronts: Defeat, Deny, Diminish and Defend**

Combating Terrorism Considerations

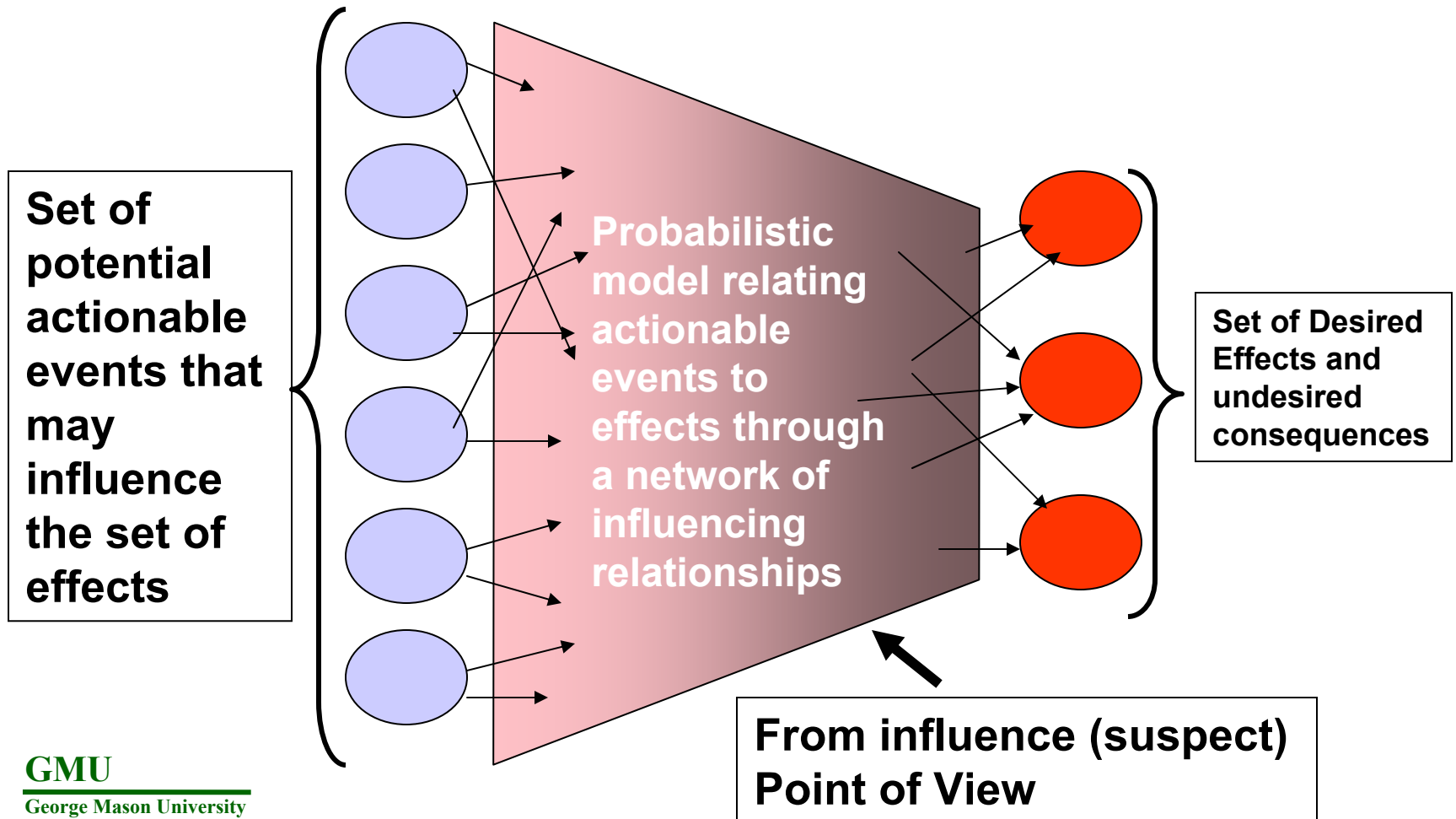
- **Counter terrorism actions**
 - “Know your enemy” and destroy them
 - Choke off the lifeblood of terrorist groups
 - Diminish conditions that terrorist can exploit
 - Sustained international effort
 - Win the war of ideas
- **Antiterrorism actions**
 - Improve and coordinate I&W
 - Agreed policies, strategies and plans
 - Investment strategies and commitments to protect critical infrastructure
- **Aggravating factors**
 - Terrorist becoming more sophisticated in use of computers and telecommunications
 - Weak law enforcement institutions
 - Ineffective police and judicial systems in many foreign countries
 - Law enforcement constrained by national boundaries
 - Terrorist take advantage of institutional limitations and weaknesses to find and establish sanctuaries

Effects Based Operations

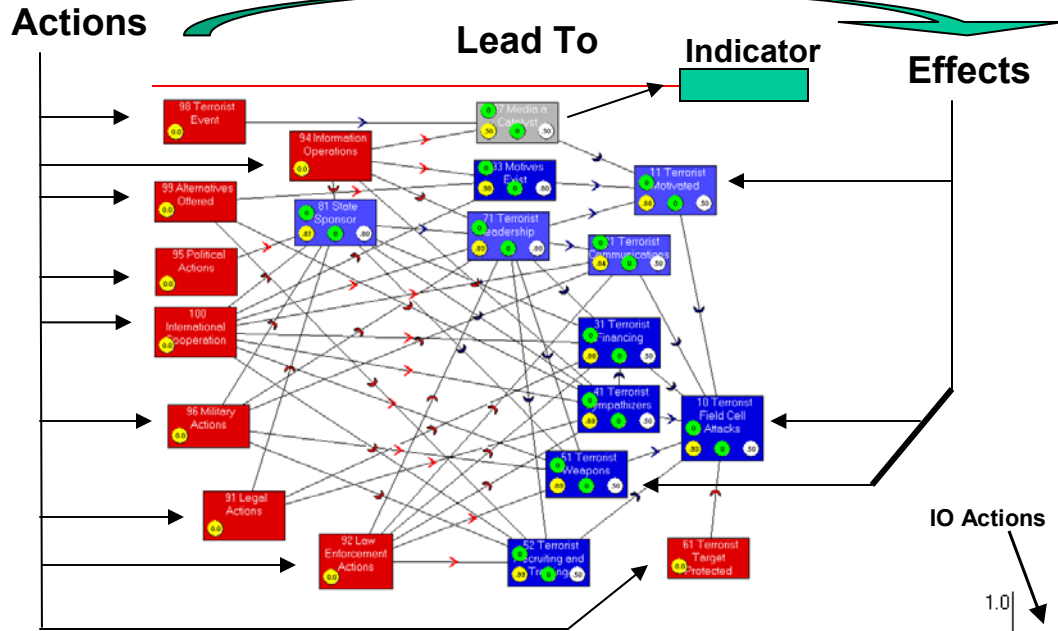
- **Planning**
 - Identify desired effects
 - Identify actionable events and relate them to the effects (establish a cause-effect relationship)
 - Develop strategies that maximize the probability of achieving the desired effects
 - Determine a set of indicators of progress and when those indications are likely to occur so progress can be monitored
- **Execution**
 - Be able to measure the degree to which the desired effects are being achieved as the plans are executed (Assessment)
 - Be able to identify undesired effects and unintended consequences
- **Creating and evaluating Courses of Action requires a **suite of tools** that support an **Effects Based process****

Influence Net Models

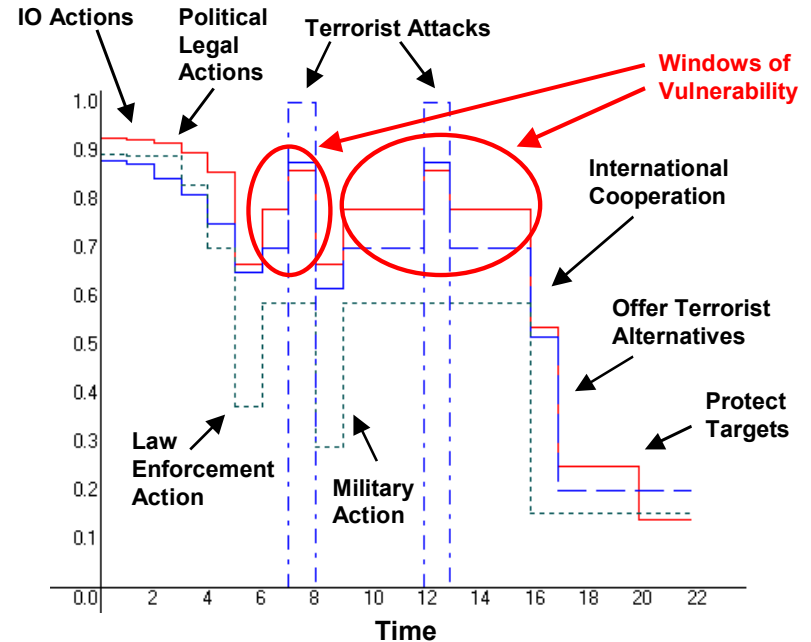
Relate actionable events to effects from the point of view of the influence



GMU: CAESAR II/EB Planning and Assessment Tool

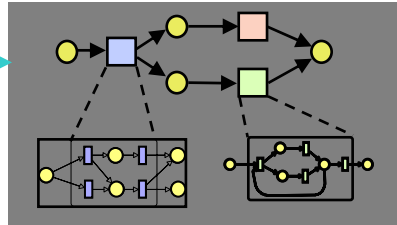


Probability Profiles

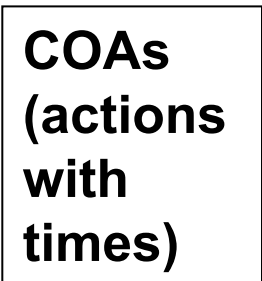


Influence Net

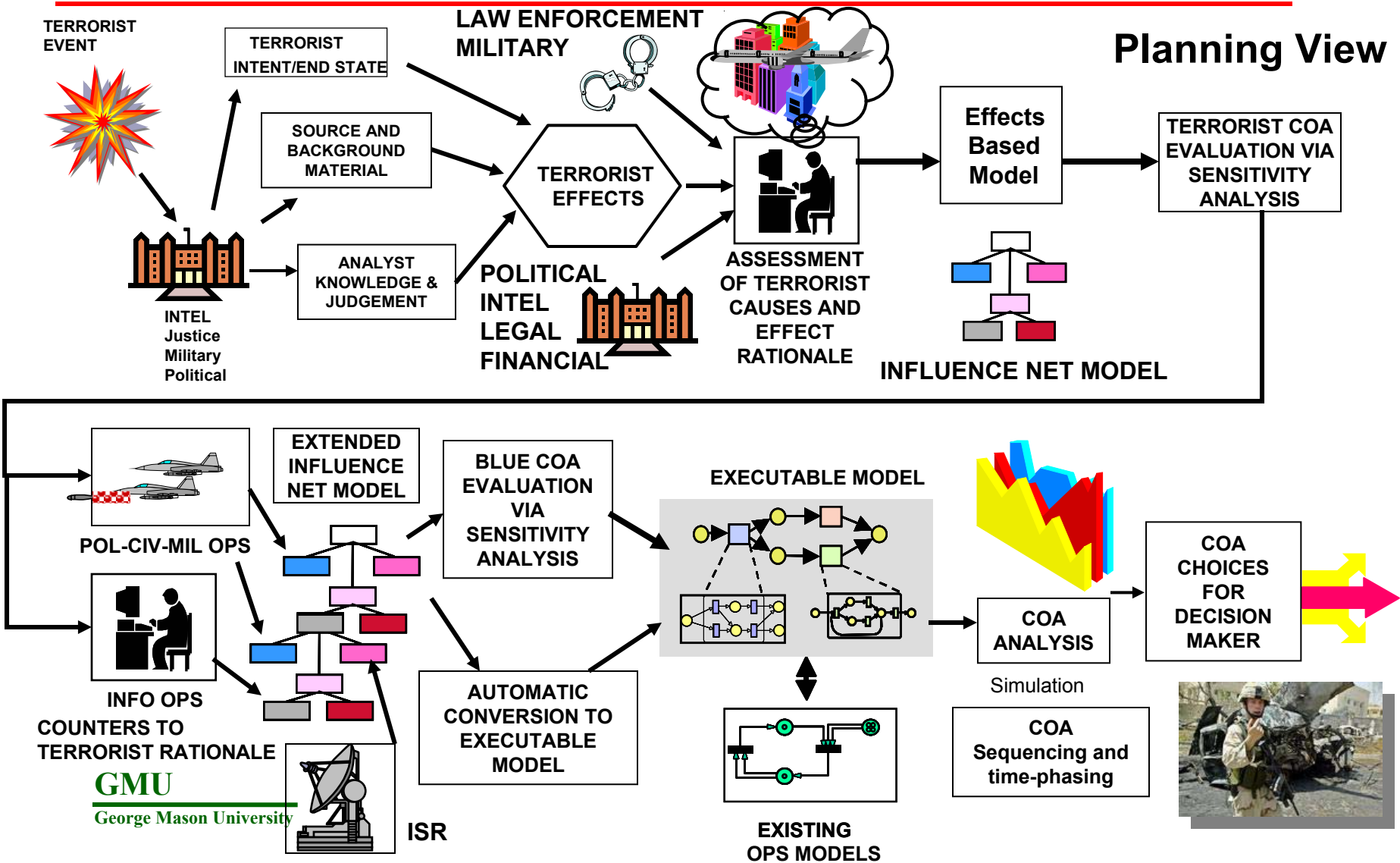
EXECUTABLE MODEL



COAs
(actions with times)

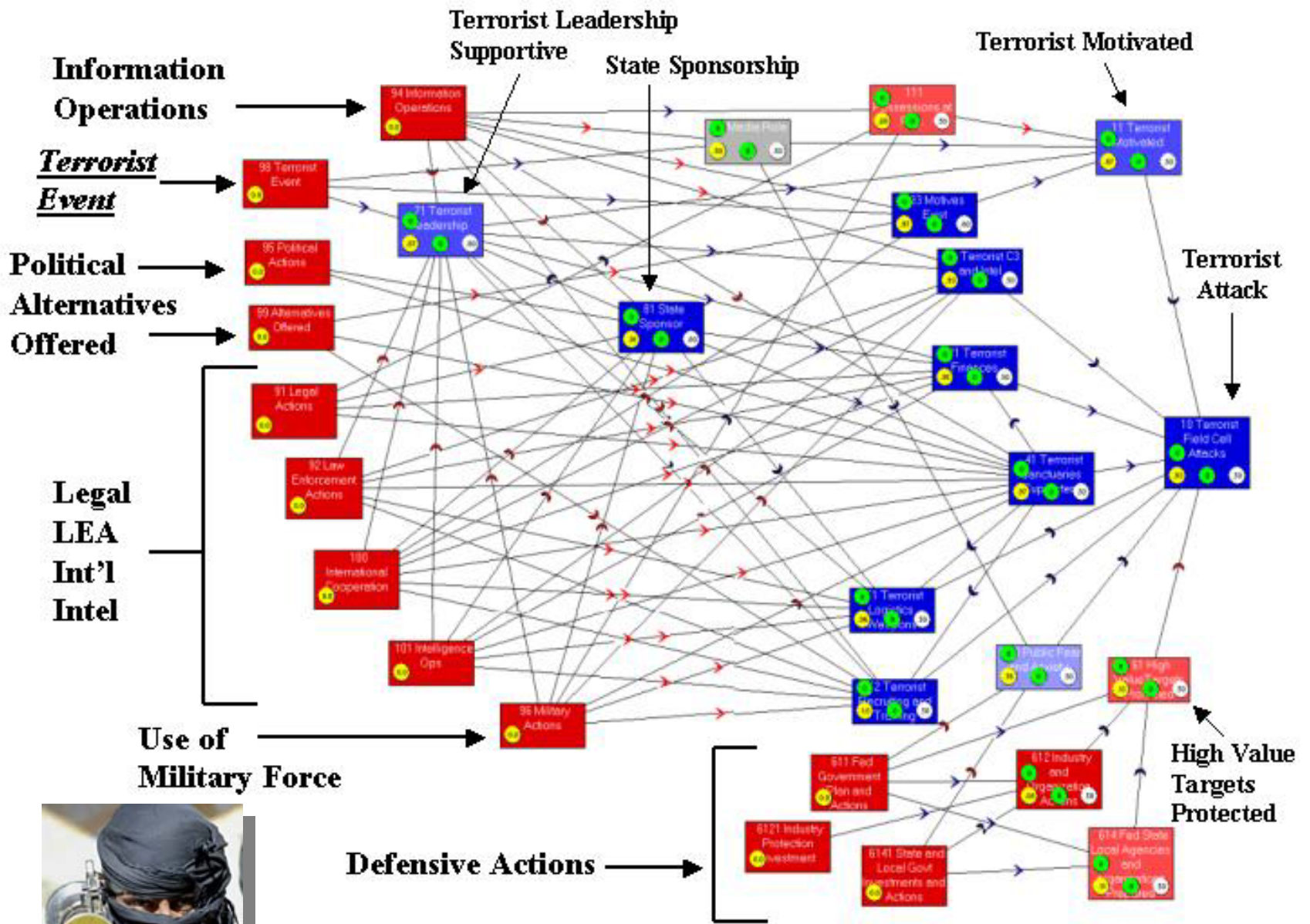


Operational Concept



Counter Terrorism Case Study

- **Purpose**
 - Demonstrate use of CAESAR II/EB to develop and assess Effects Based Course of Action (COA) to mitigate an attack by a terrorist field cell
 - Conduct analysis at Strategic level and address broad-front National level actions
- **Counter Terrorism and Antiterrorism Strategies**
 - Employ elements of National Power (Diplomatic, Information, Military and Economic)
 - Attack terrorist centers of gravity (Political, Religious, Military, Economic, Social, Infrastructure and Information)
 - Attack both Operational and Systems architectures of the terrorist
 - Defend own Operational and Systems architectures
- **Tactics**
 - Reactive, proactive, preemptive, preventative
 - Use soft means to attack political, legal, social, belief, and financial structures
 - Use hard kill to attack leaders, C3I and weapons, logistics, training camps
 - IO campaign to influence perceptions of terrorists, their loved ones and supporters
- **Roles examined**
 - Lethal versus non-lethal means
 - IO, Intelligence and Media
 - Soft power as a force multiplier when combined with hard kill

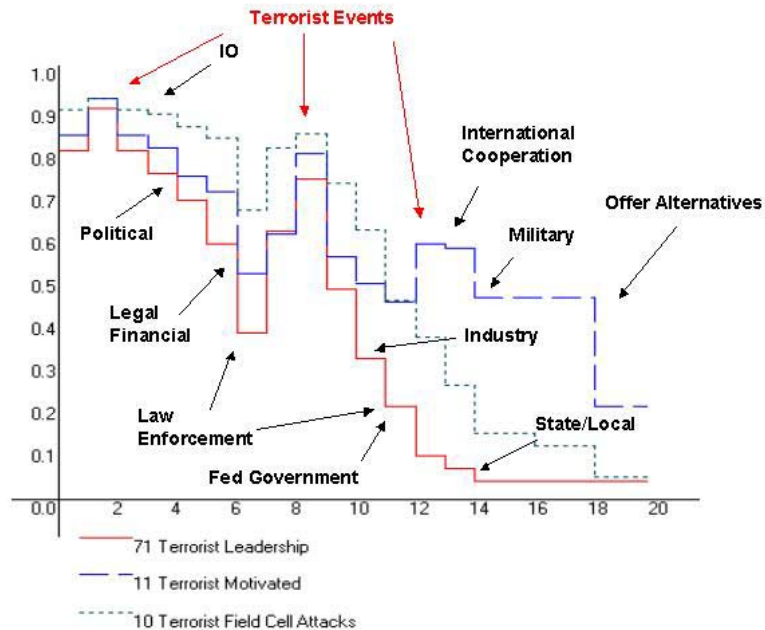


Case Study Counter Terrorism Model:
Prevent Terrorist Field Cell Attack

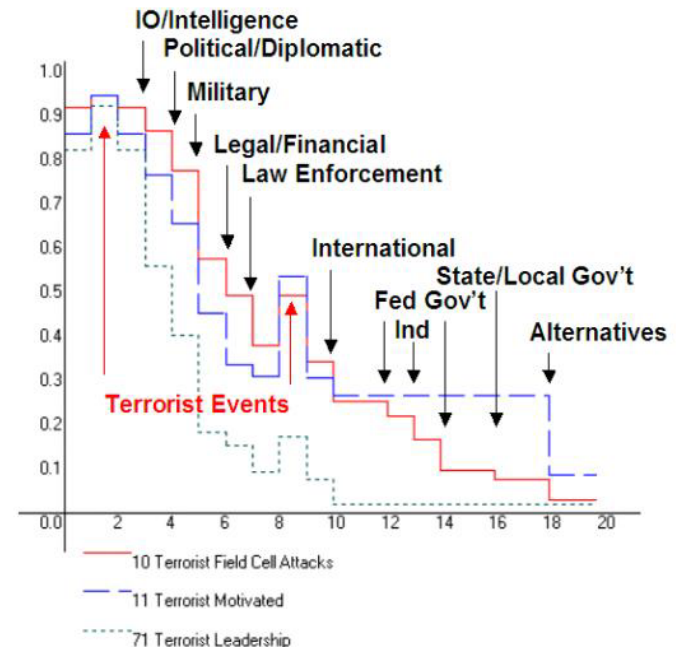


Course of Action Comparison

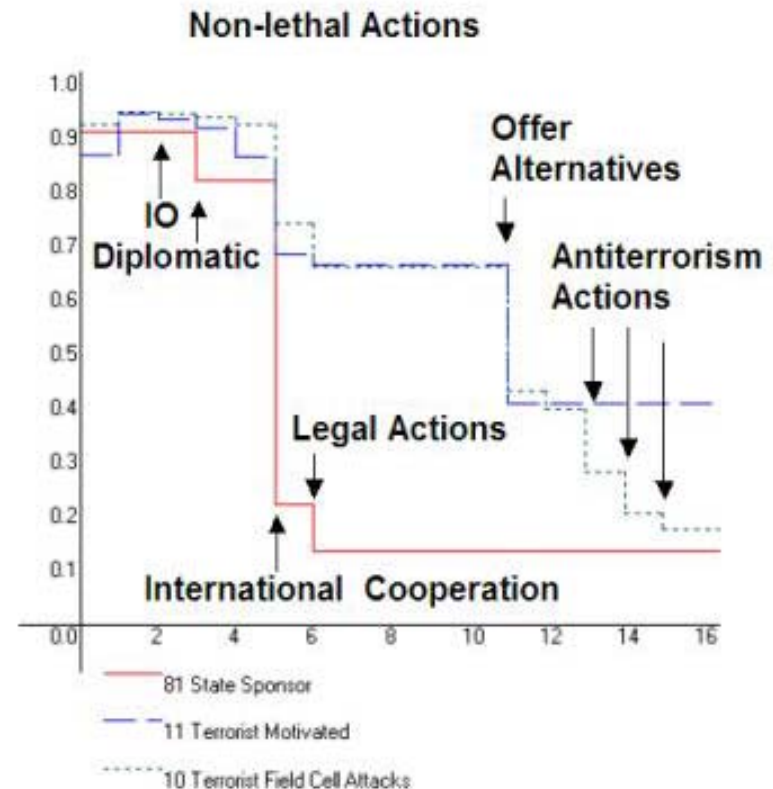
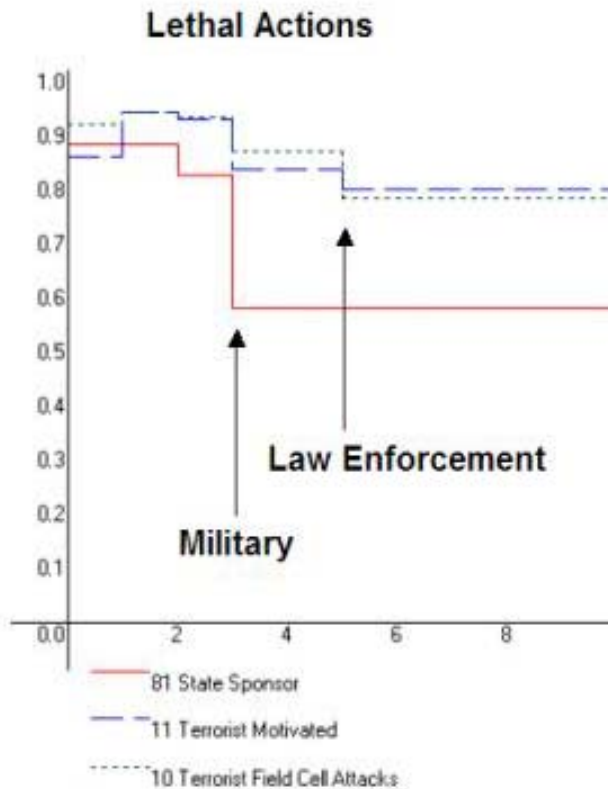
Reactive Strategy



Preemptive Strategy



Course of Action Comparison

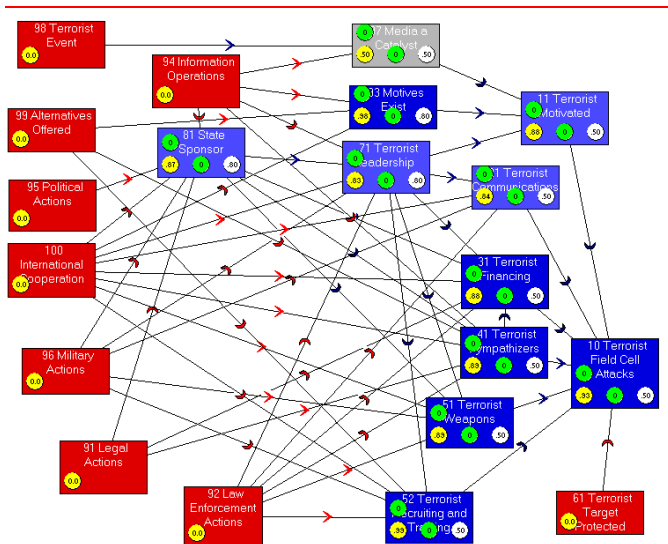


COA Assessments Observations

- Law enforcement and military actions alone are not sufficient
- Timely and persistent intelligence actions a key force multiplier
- Sensitivity analysis suggests that international cooperation and IO coupled with lethal or non-lethal actions can be force multipliers
- A good and visible antiterrorism critical infrastructure and key personnel protection program is a key deterrent—increases terrorist perception of risk
- Non-lethal means can be significant contributors—contributes to reducing state sponsorship of terrorists and can be force multipliers when combined with military and law enforcement actions
- Offering alternatives to improve quality of life of terrorist supporters key—contributes to reducing terrorist motivation

Counter terrorism and antiterrorism strategies need to address the operational and technical architectures of both the terrorist and ours

CAESAR II/EB Modeling Challenges



Influence Net

- **Understanding the situation to be modeled**
 - Subject matter experts
 - Analyst understanding
- **Constructing models**
 - Analyst experience and ability to view adversary perspective
 - Effects to be modeled
 - Causal relationships
 - Predictions of truth or falsity of node effects
 - Mix of positive and negative nodal influences
 - Selection, timing and sequencing of actions
 - Build a little, test a little
- **Some limitations**
 - Persistence not modeled
 - No differentiation between effects of sequence of actions
 - Research not operational tool
 - Man-machine interface not user friendly
 - Model building timely and complex task
 - Visualization limited to probability profiles and vu-graphs
 - COA development and assessments largely trial and error experimentation
 - Identification of unintended consequences not straight forward
 - Works best at strategic level and too a limited extent at the operational level

Concluding Observations

- **Developed an initial operational concept (a process) for the use of CAESAR II/EB**
 - In counter terrorism offensive courses of action planning to influence terrorist perceptions that the risk is too high to attack
 - In antiterrorism defensive courses of action planning to influence terrorist perceptions that the risk is too high to attack
- **Demonstrated modeling and analysis techniques that can support EBO process for COA analysis for combating terrorism**
- **Model building and COA development and assessment are an “Art” not a “Science”**
 - SMEs for influence net development
 - Model building experience is essential
- **It’s the “Process” not the probability profiles that is the most important benefit**

Concluding Observations

- **Need improved tool capabilities**
 - **Better man-machine interface**
 - **Visualization and graphics**
 - Temporal representations of COAs
 - Decision-maker presentation needs
 - **Cognitive Models of adversary reasoning**
 - **Web access to facilitate collaboration and information sharing**
 - **Model building and sensitivity analysis**
 - Selection of probabilities and time delays
 - Selection of optimum COAs
 - Identification of unintended consequences
 - Persistence and evidence
- **Air Force Rome Labs research and modeling has addressed many of the CAESAR II/EB short falls**
 - **Causal Analysis Tool incorporates**
 - Modeling persistence
 - Improved man-machine interface and visualization capabilities