



Multi-domain Counter-terrorism Modeling

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MORS WG16 & WG29

The Goal

- Capture the complex dynamics of a global network of people, organizations, and resources
 - Al Qaeda is one challenge
 - Timothy McVeigh is another
- Equip our government with tools to enhance thinking, planning, and training
- Explore consistent, logical, and rigorous relationships through the construction of models

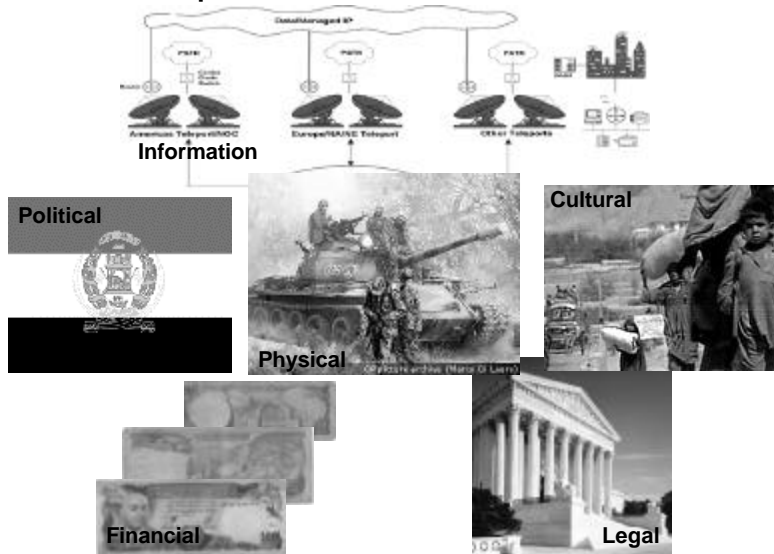


The Target



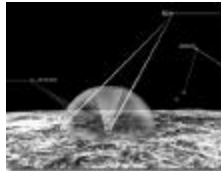
- The command nucleus is not the only target in counter-terrorism activities
- Field Cells, Communications, Weapons, Financial Assets, Sympathizers, and National Hosts are all part of the target set
- Each of these is made up of assets that reside in different domains

Operational Domains



Domain Models

Information



Political



Physical



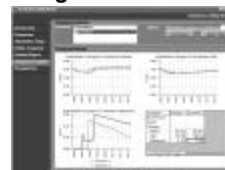
Cultural



Financial

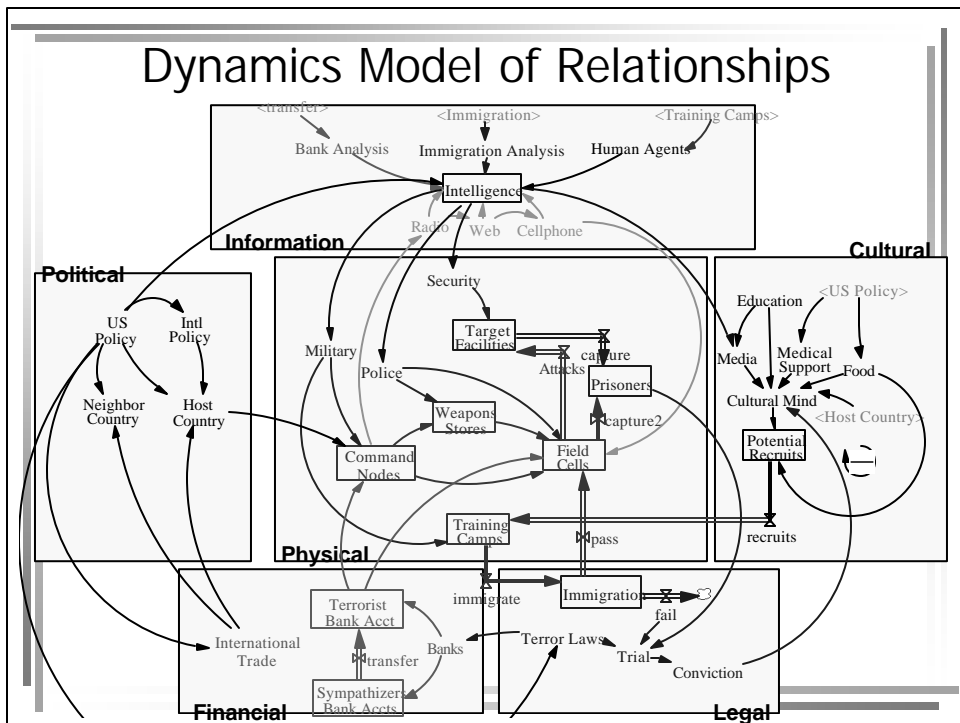
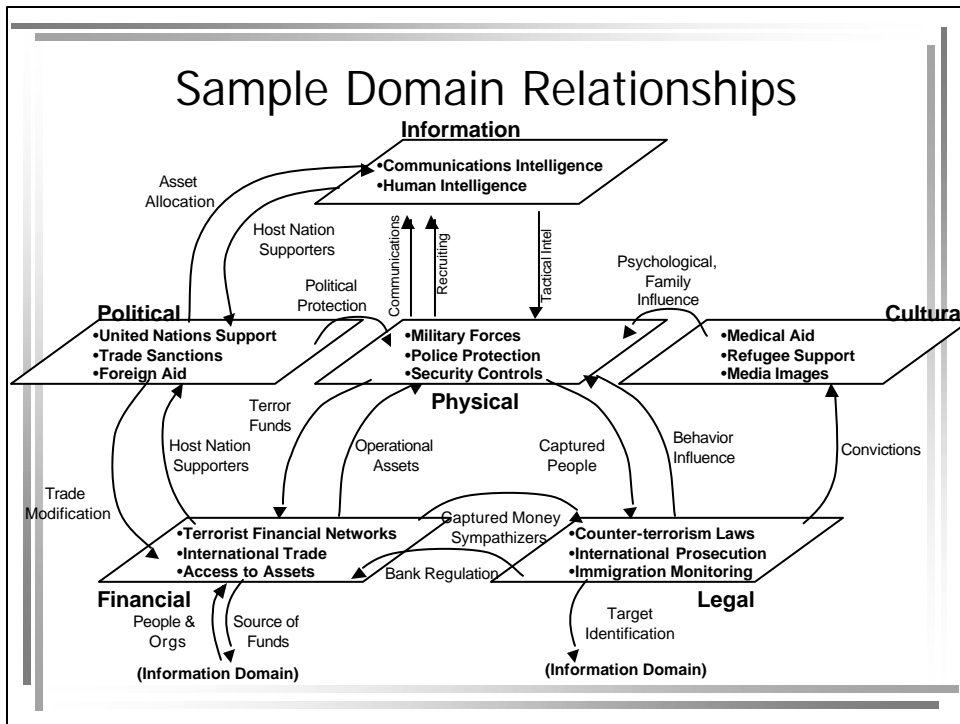


Legal



Domain Relationships

- Objects, Interactions, and Relationships must be grouped into functional domains
- Each domain requires a different modeling abstraction
 - Missiles, Bank Transactions, Legal Cases, Intelligence Analysis, and Medical relief will not fit into one simulation system
- Cross-domain data exchanges will carry very unique information
 - Not valuable to every federated domain model



Objects and Interactions of Interest

	Physical	Information	Political	Cultural	Financial	Legal
Objects	Terror Command Terror Field Cells Military Forces Special Forces Law Enforcement Customs	Sensor Platforms Sensors Analysts Distribution Cells	National Govt United Nations Tribal Govt	Aid Workers Food Medicine Media Education	Finance Institutions Finance Networks Account Holders Money	Justice System Military Tribunals
Modifiers	Fear Loyalty Duty Org Visibility	Cultural Coop Legal Position	Power Attention	Political Enviro Cultural Mind	Self-interest Asset Access	Political Positions Financial Info Mental State

NOTE: This is not a FOM, further abstraction is required

Applications of CT Models

- Classrooms
 - Teach new concepts through exploration
- Training Exercises
 - Rehearse actions in cross-functional teams
- Analysis
 - Identify effective tactics & countermeasures
- Prediction
 - Identify clues to future attacks

Conclusion

- Traditional physical combat simulations can not be modified to capture the entire domain of interest.
 - Explorations with these tools will lead to known answers and brick walls
- We don't currently understand the problem well enough to create a simulation or a federation that can usefully represent it.
 - It will require a combination of combat, information, political, cultural, financial, and legal sims to capture important details
 - New objects, interactions, and object modifiers will have to be selected, discovered, and invented
- Counter-terrorism is this generation's Fulda Gap. It will be our primary focus for at least one decade.
 - We should begin addressing the problem now