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2011

Human Social Culture Behavior (HSCB)  
Modeling Standards Study Group  
Investigations: Objectives and Early Findings

Blais, Curtis

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# Human Social Culture Behavior (HSCB) Modeling Standards Study Group Investigations: Objectives and Early Findings

Invited Presentation

Curtis Blais  
MOVES Institute  
Naval Postgraduate School  
clblais@nps.edu

# Outline

- Study Group Objectives
- Challenges
- Areas of Interest
- Study Group Activities
- Early Findings
- Road Ahead

# Study Group Objectives

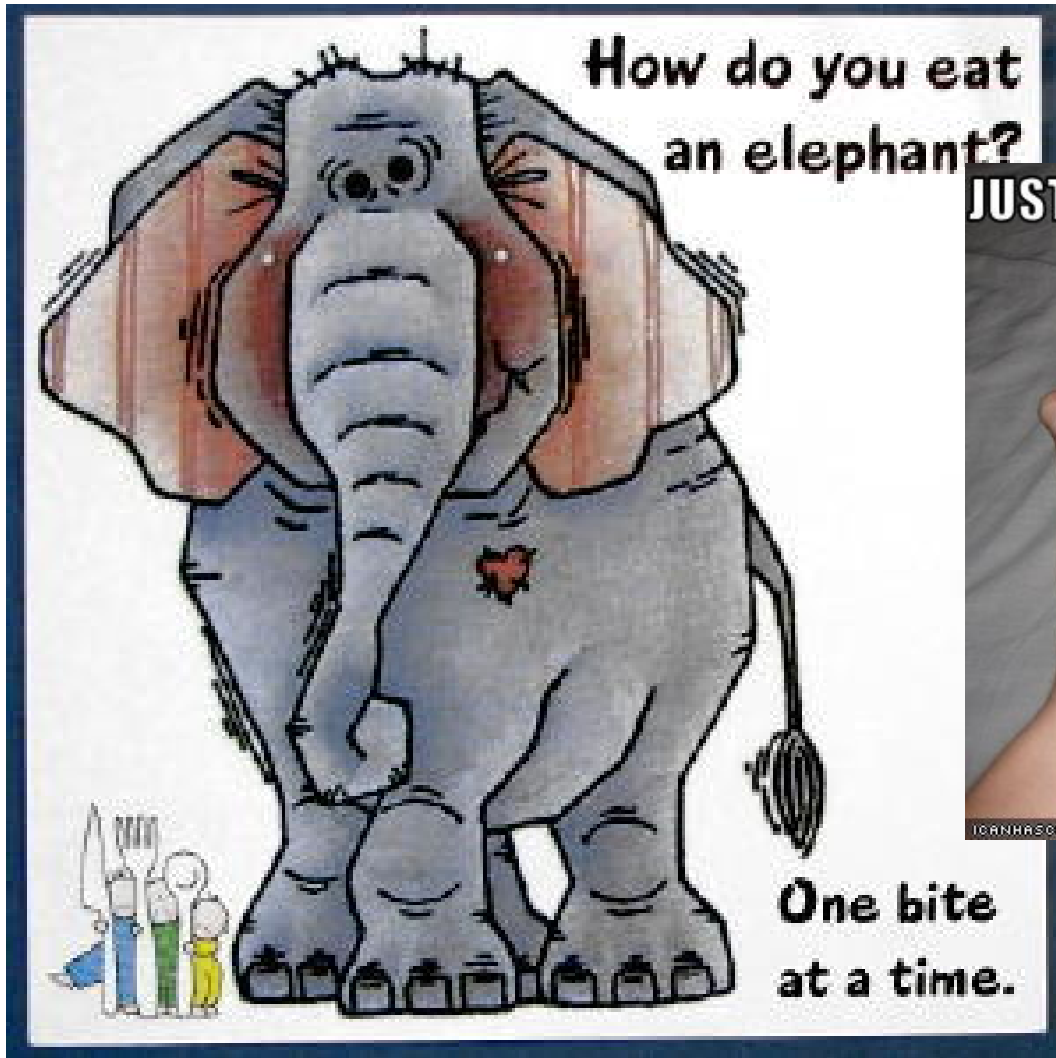
- Determine the need for standards (or best practices, or other products as may be determined to be appropriate) in the area of Human Social Culture Behavior (HSCB) modeling and simulation
- Make recommendations to SISO leadership for the development of any needed standards in this area.

# Study Group Objectives

- Prepare a Study Group Report of the findings and recommendations.
- Period of Performance: One year from SG Kick-off....due out in September 2011!

**GACK!!!!**

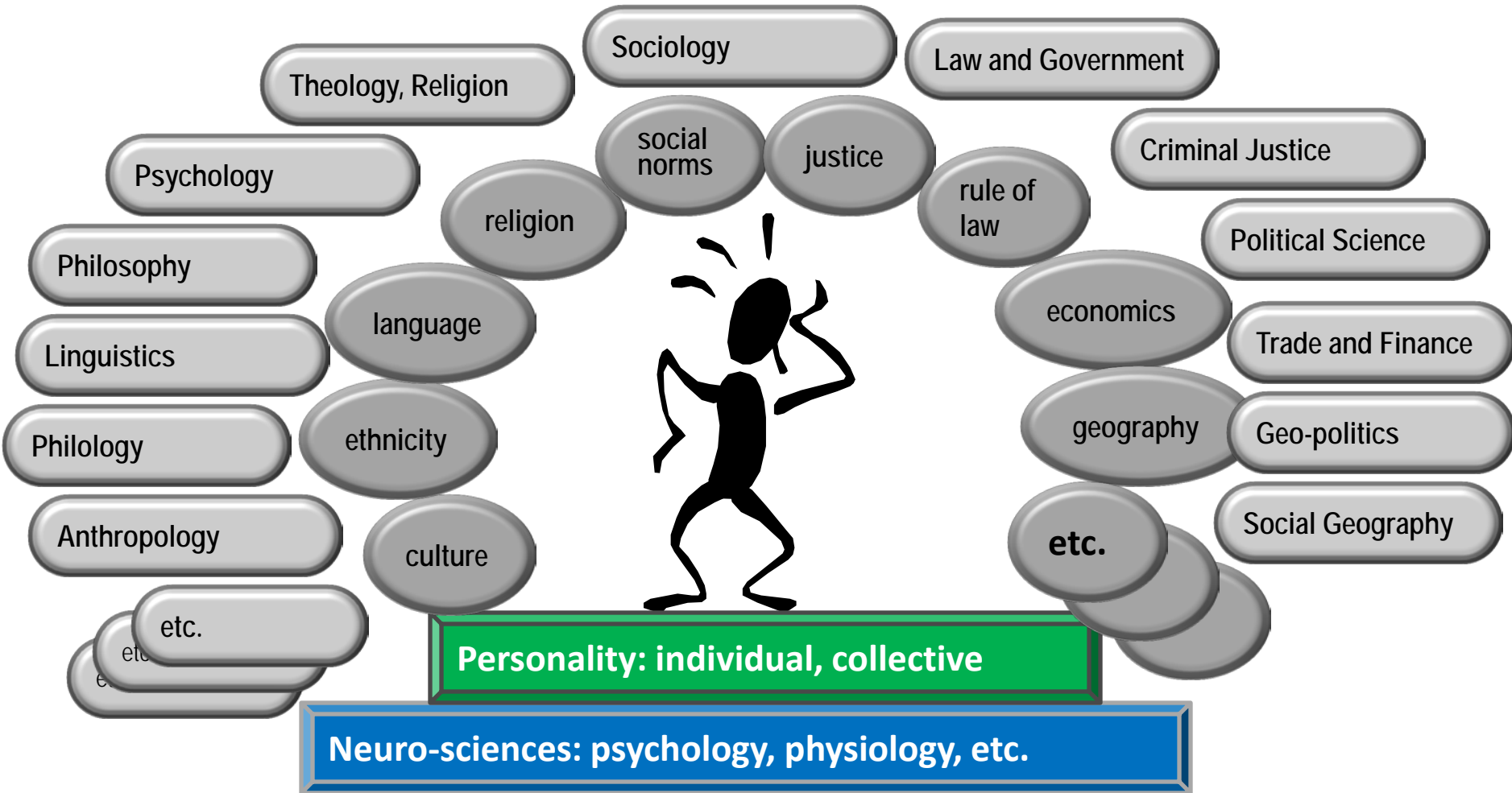
# Challenges



JUST LIKE EATING AN ELEPHANT



# Challenges: Diversity of Theories



# Challenges: Numerous Methods, Models, and Tools

Type	Name	Links	Proponent
Situational Awareness	Interim Semi-static Simulation Model ( <b>ISSM</b> )	Background and Description	<a href="#">Hartley Consulting</a>
	Measuring Progress in Conflict Environments ( <b>MPICE</b> )	<a href="#">Background</a>	<a href="#">United States Institute of Peace</a>
Forecasting	Gallup Leading Assessment of State Stability ( <b>GLASS</b> )		Gallup
	Political Radicals ( <b>POLRAD</b> )		Gallup
	Conflict Assessment System Tool ( <b>CAST</b> )	<a href="#">Article</a>	<a href="#">The Fund for Peace</a>
Social Network	<b>ORA</b>	<a href="#">Tools and Downloads</a>	<a href="#">CASOS</a>
General Simulation	Synthetic Environments for Analysis and Simulation ( <b>SEAS</b> )	<a href="#">Background</a>	<a href="#">Simulex</a>
	Conflict Modeling, Planning, and Outcomes Experimentation ( <b>COMPOEX</b> )	<a href="#">VV&amp;A Project</a>	DARPA
	The Flexible Asymmetric Simulation Technologies ( <b>FAST</b> ) Toolbox: Diplomatic and Military Operations in a Non-warfighting Domain (DIAMOND)-US; Interim Semi-static Stability Model (ISSM); Joint Conflict and Tactical Simulation (JCATS); Unit Order of Battle Data Access Tool (UOB DAT); Pythagoras; and supporting tools	<a href="#">Background</a>	DMSO, DRC
	Diplomatic and Military Operations in a Non-warfighting Domain ( <b>DIAMOND</b> )		DSTL, UK
	HSCB Testbed		CERDEC I2WD
	Strategic Management System ( <b>STRATMAS</b> )	<a href="#">Background</a>	Joint Staff (J8) and Swedish Armed Forces



# Challenges: Numerous Methods, Models, and Tools

Type	Name	Links	Proponent
Political Opinion Simulation	Senturion	<a href="#">Background</a>	<a href="#">Sentia Group</a>
Counterinsurgency	COIN (or Hairball)	<i>A System Dynamics model of the FM 3-24 COIN Manual, 2009</i>	JIEDDO, J8/WAD
	SWORD	"The SWORD model of Counterinsurgency: a summary and update," <i>Small Wars Journal</i> , 2008.	John T. Fishel & Max G. Manwaring
Game	DNI/NIC Strategic Game		DNI
	Peace Support Operations Model (PSOM)	<a href="#">Overview</a>	DSTL, UK

## Other Lists of Models

- [JFCOM PMESII Tools Wiki](#)
- [General OOTW Tools](#)
- [Consequence Management Tools](#)
- [GWOT Tools](#)

# Other Challenges

- Engaging the social science community in M&S concerns.
- Educating the M&S community in social science theory and practice.
- Finding and understanding the nature and quality of data supporting HSCB modeling.
- ...add to the list...

# Areas of Interest

- Terminology, taxonomy, conceptualization, ontology – establishing a common language for discussing aspects of the domain
- Data: sources, availability, quality, origination – establishing useful metadata
- Methods, models, and tools
- Modeling frameworks and data interchange
- ...others?...

# Study Group Activities

- Bring together M&S and subject matter experts to investigate the need for standards for HSCB Modeling to promote common understanding, information sharing, model interoperability, common data formats, and other areas as determined to be important to this area of study.
- Utilize the SG reflector and file sharing space provided for this SG to promote collaboration and communication within the group.
- Schedule and conduct regular meetings to discuss requirements for HSCB modeling standards.
- Establish tiger teams and working groups to address particular aspects of the study questions when additional detail or specialized research is needed.

# Early Findings

- Numerous ongoing efforts across many fronts
- Several are reflected in the papers being presented in the HSCB-CMSS Forum today:
  - 11S-SIW-014 Status Report: A Review of the Critical Needs for Interdisciplinary Standards within the HSCB User Community
  - 11S-SIW-027 Toward Data Interoperability for HSCB Models
  - 11S-SIW-033 How Does the Black Swan Fly? Considerations for an HSCB Metamodel
  - 11S-SIW-047 Operational Environment Scenario Generation! Aligning MSDL for Planning in an IW Context
  - 11S-SIW-048 Developing HSCB Ontologies to Support Simulations
  - 11S-SIW-060 Building an Angry Grandmother

# Validation Framework Concept Map

## “The Golden Triangle”

**Having developers provide a detailed conceptual model, a referent that describes each social science theory that will be modeled (including alternate theories and why the candidate theory was chosen), a description of the data that the model requires, and the source(s) of the data will be vital to producing a model that can be validated.**

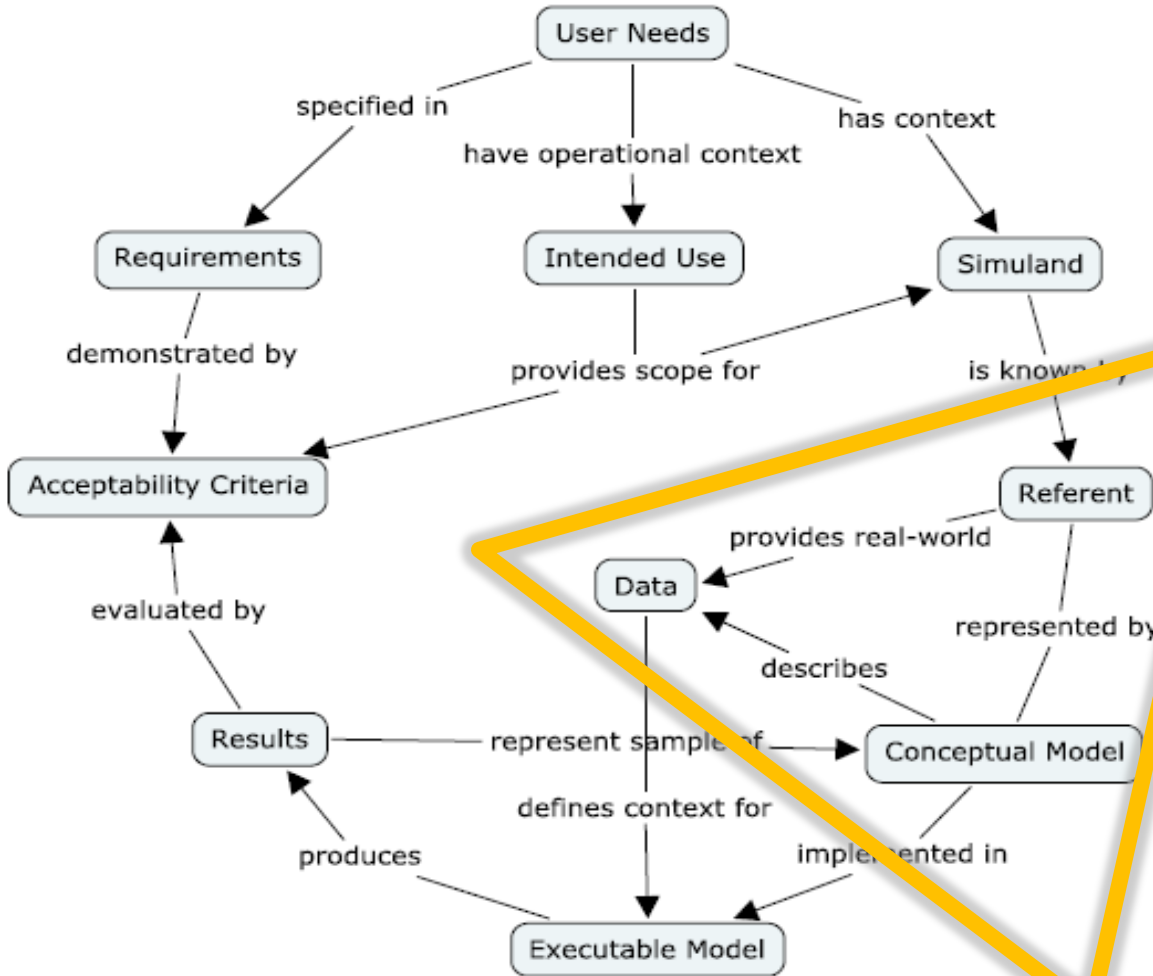
- User Needs
  - The developer needs to obtain a succinct and clear statement of the problem the M&S is expected to address.

- Requirements
  - Develop specific functional or quality statements that can be directly and explicitly assessed to determine requirement.

- Acceptability Criteria
  - Develop a requirements traceability matrix relating each specified requirement with acceptability criteria applicable to the intended use.

- Results
  - The acceptability criteria identify what the model needs to do to satisfy or meet the set of respective requirements pertinent to the intended use.

- Data
  - The greater the specificity in the data requirements for a model, the greater the ability to collect the data needed to populate the model.



- Intended Use
  - Obtain a clear, succinct statement of intended use from the user representatives.

- Simuland
  - The simuland is the real-world system of interest, including the objects, processes, or phenomena to be simulated.

- Referent
  - Identify the social science theory or theories, if multiple competing theories will be represented in the model for comparison that explains that phenomena.

- Conceptual Model
  - Develop the conceptual model using tools and techniques that create machine-readable specifications of the data and logic of the model.

- Executable Model
  - Design the model implementation to be as transparent as possible to permit analysis of execution paths and computed outcomes.

# ONR HSCB Modeling Project

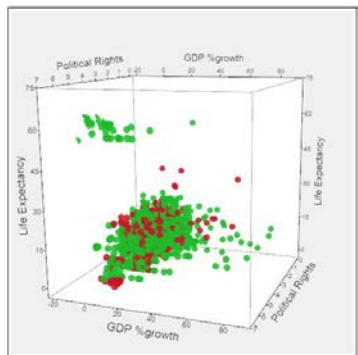
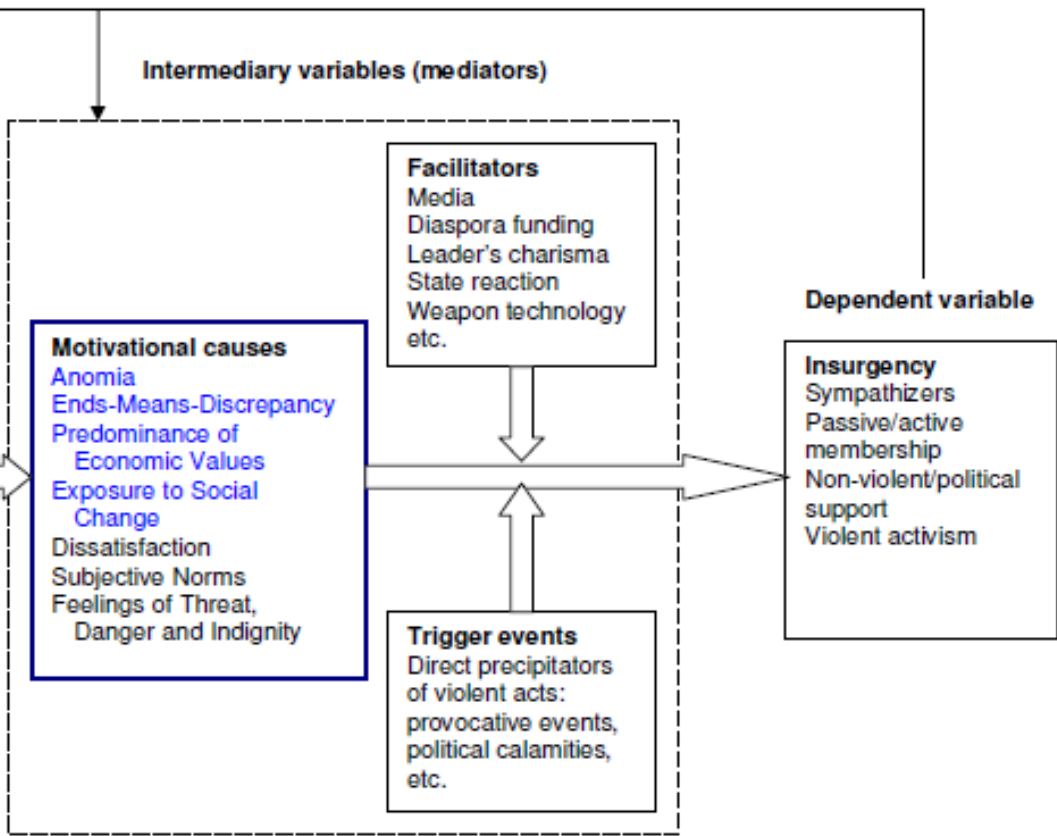
NPS Project 2009-2011: Recognizing Patterns of Anomie that Set the Conditions for Insurgency (refer to 10S-SIW-005)



**Rapid social change**  
 Globalization  
 Modernization  
 Urbanization  
 Mass migration  
 Transitions

**Independent variables**

**Structural causes**  
 Historical heritage  
 Demographic imbalance  
 Economic disparities  
 Unemployment  
 International presence (political, economic/FDI)  
 Trade openness  
 Regime type  
 etc.



Indicators on a Macro-level

Indicators on a Micro-level

Indicators on a Macro-level

Indicators on a Macro-level

**Early Detection System**

# Road Ahead

- Re-ignite Study Group activities
  - Come to the SG Meeting tonight!!
- Continue current investigations
- Launch new investigations
- Energize the community for greater involvement
- Submit abstracts for Fall SIW!



# Relevant Community Forums

SISO HSCB Modeling Standards Study Group email reflector and discussion forum

Linked In discussion groups <http://www.linkedin.com>

DIME, PMESII, and HSCB

(subgroup) HSCB Modeling Standards

Irregular Warfare Community of Practice

<https://connect.dco.dod.mil/r35151781>

Irregular Warfare Wiki (CAC required)

<https://defensemetawiki.pae.osd.mil/DAC/>

# Questions/Discussion

## NOTE

HSCB Modeling Standards Study Group meeting  
from 7pm-9pm TONIGHT in Salon G!

### Working Agenda:

Orientation for New Attendees

Discuss Progress

Plan Work Activities