



Human Systems Community of Interest IR&D Technical Interchange 24-27 June 2013

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**Social, Cultural and Behavioral Understanding
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Beyond Deep Dives

The social sciences were re-introduced as priority research in order to achieve "deep dives" of understanding of asymmetric contexts, in particular Afghanistan and Iraq.

Today the US military is becoming increasingly involved in international situations and global emergencies.

Human Emergencies and International Crises Come in Many Forms, Everywhere



And there are new kinds of opposition and challenges



June, 2012 "Long March" in Lahore, Pakistan directed at stopping NATO and U. S. supply lines from crossing from Pakistan to Afghanistan.

Novel conflagrations such as the Syrian Civil War also pose significant challenges to the standard tactics, techniques and procedures of asymmetric warfare.



Contextualized Social Situation Awareness Continues to Be a Priority Issue

Today and in the future, military missions will be characterized by:

- * Need for improved distributed operations information and rapid, contextualized situation awareness
- * Dynamic mission spaces that are scattered across the globe
- * Need for better understanding of multiple cultures and social issues in crisis zones that span multiple nations
- * Improved non-kinetic and less kinetic options needs
- * Shorter missions with defined parameters

HUMAN BEHAVIOR is also CHANGING and DYNAMIC

Big, Social Data

With information coming in from computer systems, models, and distributed operators, developing contextualized social understanding and situation awareness is more challenging than ever.

SOCIO-TECHNICAL BEHAVIOR

The socio-technical domain is comprised of the **behaviors, discourse and activities** undertaken by individuals, crowds, groups and organizations that are **facilitated by computer platforms, mobile phones and devices, and software platforms.**



Examples include crowdsourcing, Mechanical Turk projects, social-media mediated protest and mobbing, disaster response platform information campaigns, social cyber-attack, social-media facilitated attacks on cyber systems, political and social discourses on social media, etc.

Crisis flows have high volume, high velocity: **Substantial, Sudden Impact**

Information volume and velocity: recent Turkish protests (turned riots) yielded flows of 20-100K messages per hour in the "1%" feed (not the full feed!) Over 672K messages collected on June 1, now averaging over 200K messages per day in Twitter alone.

This became **THAT** →



'Woman in red' sprayed with teargas becomes symbol of Turkey protests



Via: Twitter

Istanbul, June 1, hours after the beginning of the Turkish civil protests

Some Key Challenges of Social Informatics

1. **The Ingestion problem.** How to aggregate and capture data from many types of streams, including models.
2. **The Filtering Problem.** How to filter the data into meaningful elements.
3. **The Analytic Problem.** How to sort, break down, re-group information, translate, model, summarize it coherently and accurately through visualization, text, statistics or scoring. This area includes diverse issues such as sentiment and content analysis, discourse analysis, community analysis, language translation, deception and intent analysis.
4. **The Relevance Problem.** How to relate this information to a strategic, operational or tactical problem or need.
5. **The Design Problem.** How to interact with diverse information on many scales, explore it, use it. How to intuitively discover new things. Sense-making--How to come to a conclusion about the importance, utility and meaning of the information. How to easily recognize bias, gaps and other significant issues.

Most current research is concerned with just the top three or four.

Militaries, govt and non-government organizations have a few more problems (policy and application)

6. The Classification Problem. How to get information from the "low" side to the "high" side (where much of the analysis takes place) (gov/mil issue)

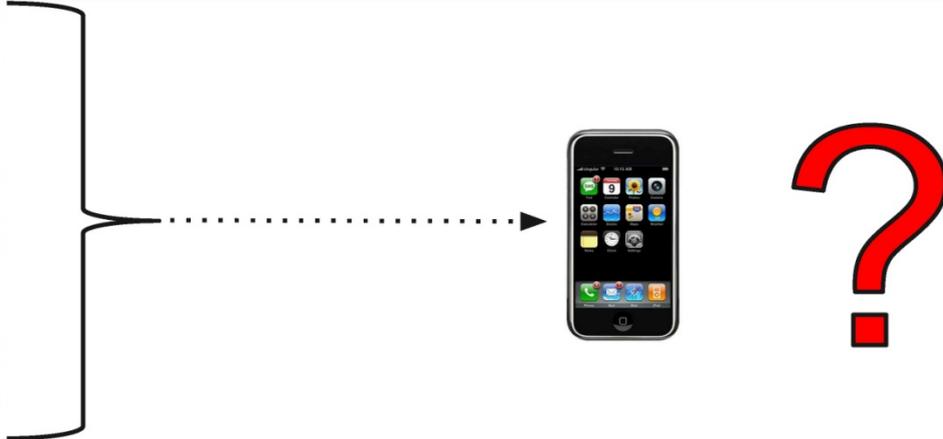
7. The PII Problem. How to avoid invasion of privacy while still maintaining situation awareness by controlling the Personally Identifiable Information within the stream, without losing mission effectiveness.

8. The Workflow Problem. How to incorporate these new flows of information into existing channels, missions, and determining who should be responsible for what.

9. The Sharing Problem. How to share in controlled ways (with a policy edge) your information, analysis, conclusions? With whom? For what purpose? In what detail? At what levels (strategic, operational, tactical)? When? Under what conditions? Will there be exceptions?

10. The Trust Problem. Given that there are few precedents for vetting and validating these streams, what do you trust? Whom do you trust? When do you trust? To what level do you trust? What is properly sharable?

The Other Design Problem



Military operators on the ground need:

- * Rapidly understood, reliable information
- * Context for that information
- * Overviews and drill-down to details
- * Over small bandwidths
- * On equipment they cannot always control
- * With good opsec to protect themselves, the data

Collaborative Approaches

DoD agencies are working together in a collaborative framework to develop appropriate, sound solutions to:

- * Improve contextualized social situation understanding
- * Develop sound, practical approaches for developing and distributing contextualized, rapid social situation awareness
- * Develop improved community engagement strategies for human security operations, disaster and emergency response.

Priority research will likely involve collaborations among many agencies.