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The Internet as a Communication Medium and a Social Space: A Social Constructivist Approach to the Use of Open Data

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DSTO



1. Introduction

1.1. Intelligence at the era of transparency

“transparency does not mean that everything is completely open, not that it should be. It means rather that there are increasingly unprecedented types and amounts of information available to any one interested party about almost any other (O’Connell 2005, p. 142).

1.2. The Internet

1.3. Debates about ICTs, security and intelligence



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2. Approach

RESEARCH AREA: Social modelling as an interdisciplinary research practice

EDUCATION:

- Resnyansky L., 2002, 'Computer-mediated communication in higher education: Educators' agency in relation to technology', *Journal of Educational Enquiry*, Vol. 3, No. 1, pp. 35-59, available online at <http://www.education.unisa.edu.au/JEE>.

SECURITY TECHNOLOGY:

- Resnyansky, L. & Bennett, P., 2004, 'Ethnicity in access control and surveillance: Informing Face Recognition System evaluation', Poster presentation at *Biometrics Institute Conference*, 3 June 2004, Sydney, <http://www.biometricsinstitute.org>.
- Bennett, P. & Resnyansky, L. 2006. 'How the concept of ethnicity can inform our understanding of the potential impact of security-related technology upon work practices and society', in P. Mendis, J. Lai and E. Dawson (eds), *Recent advances in security technology: Proceedings of the 2006 RNSA Security Technology Conference* 19-21 September, Canberra, pp. 143-158.

COMPUTATIONAL MODELS:

- Resnyansky, L 2006, 'Conceptualisation of terrorism in modelling tools: critical reflexive approach', *Prometheus*, vol. 24, no. 4, pp. 441-447.
- Resnyansky, L 2007b 'Integration of social sciences in modelling: an interactionist approach to research practice', paper presented at the *First International Conference on Computational Cultural Dynamics (ICCCD 2007)*, 27-28 August, University of Maryland, USA, <<http://www.umiacs.umd.edu/conferences/icccd2007/lucy-r.pdf>>.

The integration of social sciences in the development of tools supporting intelligence analysis and modelling requires:

- (a) analysis of the heuristic significance of a particular social scientific theory, concept or approach;
- (b) critical reflection upon the sociocultural implications of the conceptual and computational models;
- (c) understanding how security practices can be affected due to the implementation of particular technological tools.



How can the use of information sources and technologies in security/intelligence be informed by social knowledge developed in postmodernist, critical, and social constructivist theories and approaches in sociology, communication and media studies, philosophy of technology, and sociology of science?



- **Introduction**
- **Technology, security and intelligence**
- **Distributed intelligence: a need for meta-information**
- **The Internet as an information source and a discursive practice**
- **Language, information, and technology**
- **Conclusion**



Legal and political discourses on the social implications of ICTs used in security practices:

- explanation of the technology's effects as dependent upon the conditions of its use
- conceptualisation of technology as a powerful yet *neutral* tool
- a trend to look for solutions mainly within the *social / legal* area

What else is needed:

- to problematise technology as yet another 'player' in the contemporary security arena
- to look for constructive *technological* solutions



Technologies of surveillance and data collection:

-SIGINT, IMINT, MASINT, GEOINT, etc

Technologies of analysis:

- Sorting, managing, highlighting and sharing data
- Exploratory modelling
- Social network analysis
- Communication and collaboration



Sharp distinction between technologies of data collection and data analysis:

- does not make much sense in the new conditions (transparent society)
- restricts analyst's understanding of what can count as relevant information
- imposes a positivist mindset based upon the antinomy of 'fact' and 'value'



The dominant research discourse on intelligence for an age of information:

- technology can affect upon the quantity of information but is quite neutral in relation to the quality of intelligence analysis and subsequent political and strategic decisions.

Implication: focus upon the conditions that are external to the technological tools:

- organisational structure and ethos
- mind-sets of intelligence community
- relationships with policy
- legislation (Berkowitz 2005; Treverton 2003).



Treverton (2003):

- Rapid technological developments and overwhelming amounts of information make reshaping of intelligence an imperative
- Intelligence business is less about collection and secrets but more about information defined as a high-quality understanding of the world using all sources
- Secrets matter much less and *selection* is the critical challenge
- 'Information brokers' need to be able to sort "fact from fiction, or signals from noise"



- **to master technology**
- **to critically assess the Internet as a sociocultural phenomenon**
- **to critically assess the ICTs as being both selected and selective and, therefore, capable of influencing the dataset and data interpretation**
- **to make more sense of diverse data (knowledge, insights) obtained from different kinds of sources**
- **to facilitate interaction and collaboration between intelligence practitioners**



- ***Distributed intelligence* networks aim at supporting exchange of information between decentralised groups with diverse skills and expertise:**

“Informal bonds may need to grow among diverse experts with idiosyncratic personal skills and the operational branches fighting terrorism, so that a phone call from an expert or operator in one country to another country can trigger specific responses without plodding through official channels” (Scott 2006, pp. 293-294).

Issues to be addressed:

- **the organisational structure (*centralisation vs. network*)**
- **organisational changes: socio-political consequences**
- **technological solutions**



The concept of distributed intelligence implies that:

- information sources need to be approached critically
- meta-information about sources is needed

Social sciences can:

- help develop a meta-analytical framework that enables analysts to capture information about a broader context in which certain facts or events are embedded
- provide theoretical frameworks that enable analysts to identify and collect relevant data in a systematic way
- provide conceptual foundations and methodologies for an analysis of discourses, ideological stances, grand narratives, and commonsensical clichés that shape both the politicians and researchers' conceptualisation of the phenomena they need to know about



Reliability issues:

- the criteria of reliability assessment
- the legitimacy and usefulness of the category of reliability for intelligence activities aiming at an understanding of social actors and trends

Reliability of sources (terms): *almost always reliable, usually reliable, fairly reliable, fairly unreliable, unreliable, and cannot be judged*

Credibility of sources (terms): *almost certainly true, very likely, likely, unlikely, very unlikely, and cannot be judged*

(Kent 2007; Pope and Jøsang 2005).



- The concept of the Internet as a source of information reflects just one aspect of this complex phenomenon
- The Internet needs to be approached first of all as a communication space, a virtual “market” in which social entities are emerging in the process of social interaction (Scott 2006)
- The Internet can become yet another site of the formation of threatening identities and groups
- This vision of the Internet corresponds to the postmodernist concepts of identity (Turkle 1995), literary criticism and semiotics (Bakhtin 1981, 1984; Barthes 1979, 1992), and discourse theory (Foucault 1983, 1984)



Concepts of *language*:

- a semiotic concept of language as a code (system of signs and rules) that is used as a means of communicating ideas or feelings
- a functional concept of language (Halliday 1985): language is used in order to offer/demand both information and service

Implication: The Internet websites aimed at the propaganda of ideas should not be dismissed as sources of data



The concept of *data* in qualitative social research (Mason 2002):

- data are not given to the researcher as something that exists independently from the researcher's theoretical assumptions and ideological stance. Rather, data are constructed in the process of research.

Sociology of science:

- the material aspects of knowledge production, transmission and consumption are as important as its content (Reid 1993)

The concept of *technology* developed in the social theories of science, technology and knowledge (Bijker, Pinch and Hughes 1987; Ellul 1964; van House 2004):

- the social and transformative nature of technology



Problems that terrorism researchers encounter when they use directory and bibliographic databases (Gordon 2004):

- **instability**
- **interfaces and search strategies are changing**

Databases are not neutral technological tools or resources. They can affect upon a research field, e.g., via establishing and changing its boundaries.



- difficult to distinguish between core and peripheral research on terrorism
- the range of data is affected by particular methodologies and theoretical assumptions (the selective nature of event databases)
- the user may be misled by the databases' descriptions emphasising the quantitative features of databases and presenting them as comprehensive sources of data
- data collected in event databases is not very reliable since it is often based on journalistic analyses and descriptive statistics



The Internet offers data/information/knowledge produced within such diverse and heterogeneous fields as academic studies, media, adversary propaganda, etc.

The use of the Internet needs to be supported by tools that enable the analyst to critically reflect upon and take into account the conditions of the data/information/knowledge production, distribution, and consumption.

Development of such tools can benefit from an integration of the multifaceted and insightful knowledge about the Internet developed within qualitative social research and from the use of methodologies of data analysis developed in sociology of science, social semiotics and critical discourse analysis.



20. Recommendations

The Internet sources need to be approached:

- in terms of their communicative *function* - Internet sources are divided into sources of information and space for social interaction and/or pragmatic action. Both types of sources can and need to be analysed as social (discursive) practices.
- in terms of the *field* of knowledge production/consumption - disciplinary research, doxa, and propaganda. In order to use data in meaningful ways, the different kinds of Internet sources need to be categorised in terms that are specific for each field.
- in terms of the *distribution* of information/knowledge. This requires an analysis of the networks, promotional techniques and the technologies that mediate access to information.



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