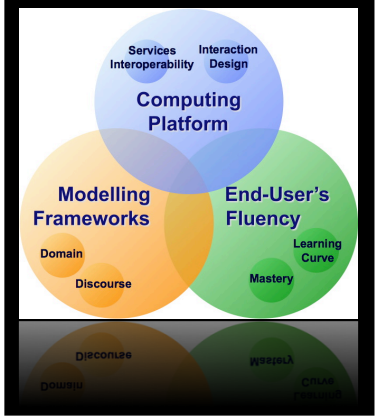


The Open University

KNOWLEDGE MEDIA KMi INSTITUTE

VASS 2010: Visual Analytics Summer School
Middlesex University, Sep. 16-24, 2010

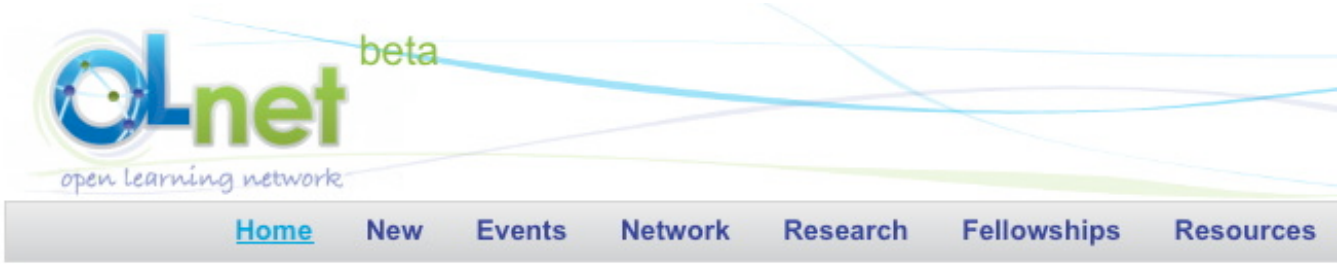
Visual Sensemaking for Contested Collective Intelligence

Simon Buckingham Shum

Knowledge Media Institute
Open University UK
http://people.kmi.open.ac.uk/sbs

Acknowledgements

Open Learning Network project (2009-12): olnet.org
funded by the William & Flora Hewlett Foundation



OLnet Collective Intelligence workstream:
http://olnet.org/collective-intelligence

Developing conceptual foundations
and infrastructure (people+proceses+tools)
for Contested Collective Intelligence
on the open social web

The Hypermedia Discourse Group
Knowledge Media Institute, Open University:

http://projects.kmi.open.ac.uk/hyperdiscourse

Funders span disciplines, from basic research to applications:

EPSRC
E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL
Arts & Humanities Research Council
JISC
e-Science dti
THE WILLIAM AND FLORA HEWLETT FOUNDATION
DARPA
NASA
ILO
World Vision International
BRITISH COUNCIL
bp

overview

the key idea
a framework
CSCA with a simple scheme
probing argumentation
social-semantic web
future directions

the key idea…

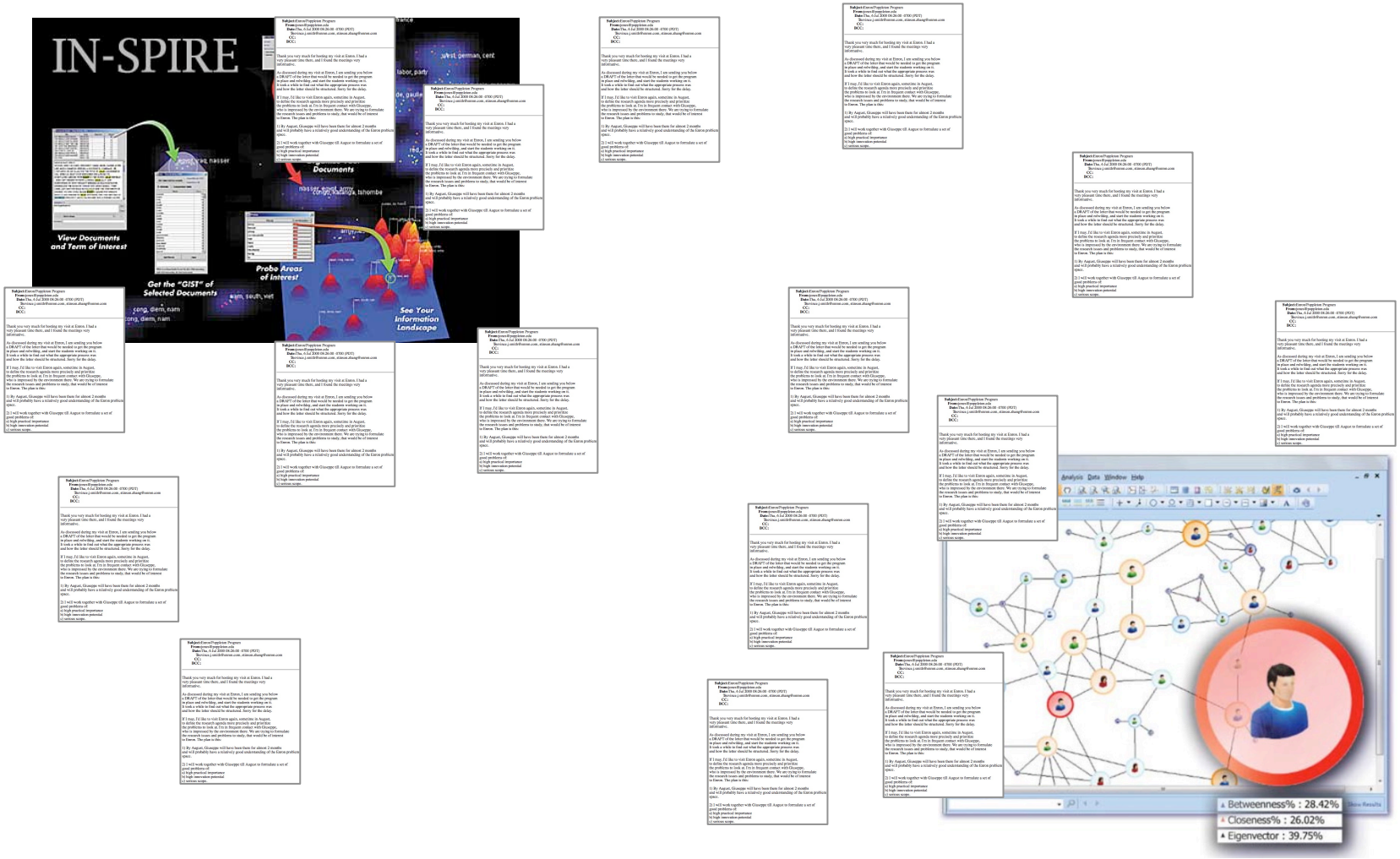
it all revolves around conversations (“discourse”)

we don’t always agree

contested collective intelligence

Where our tools fit… Given a wealth of documents…

Where our tools fit… Given a wealth of documents, and tools to detect and render potentially significant patterns…



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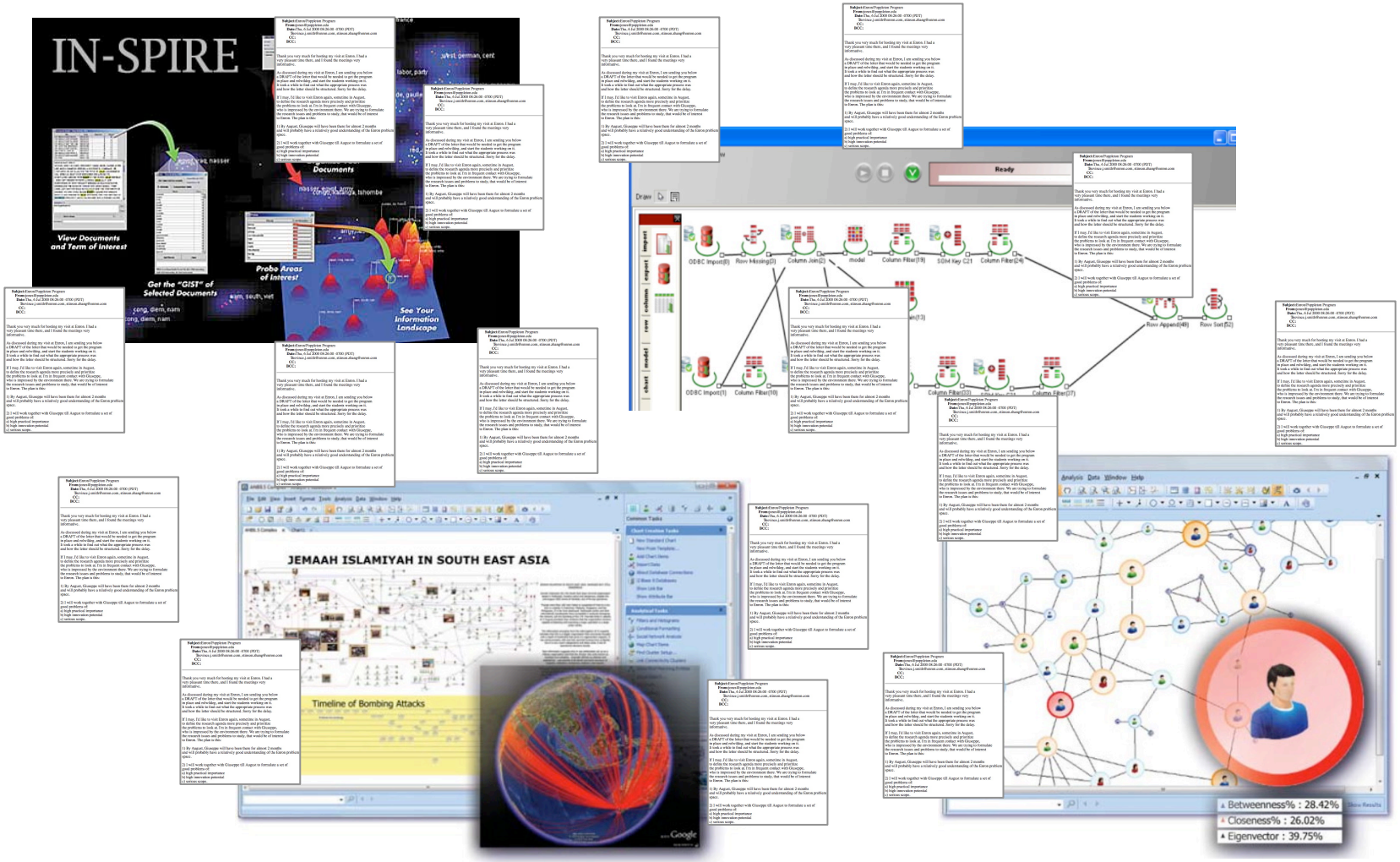
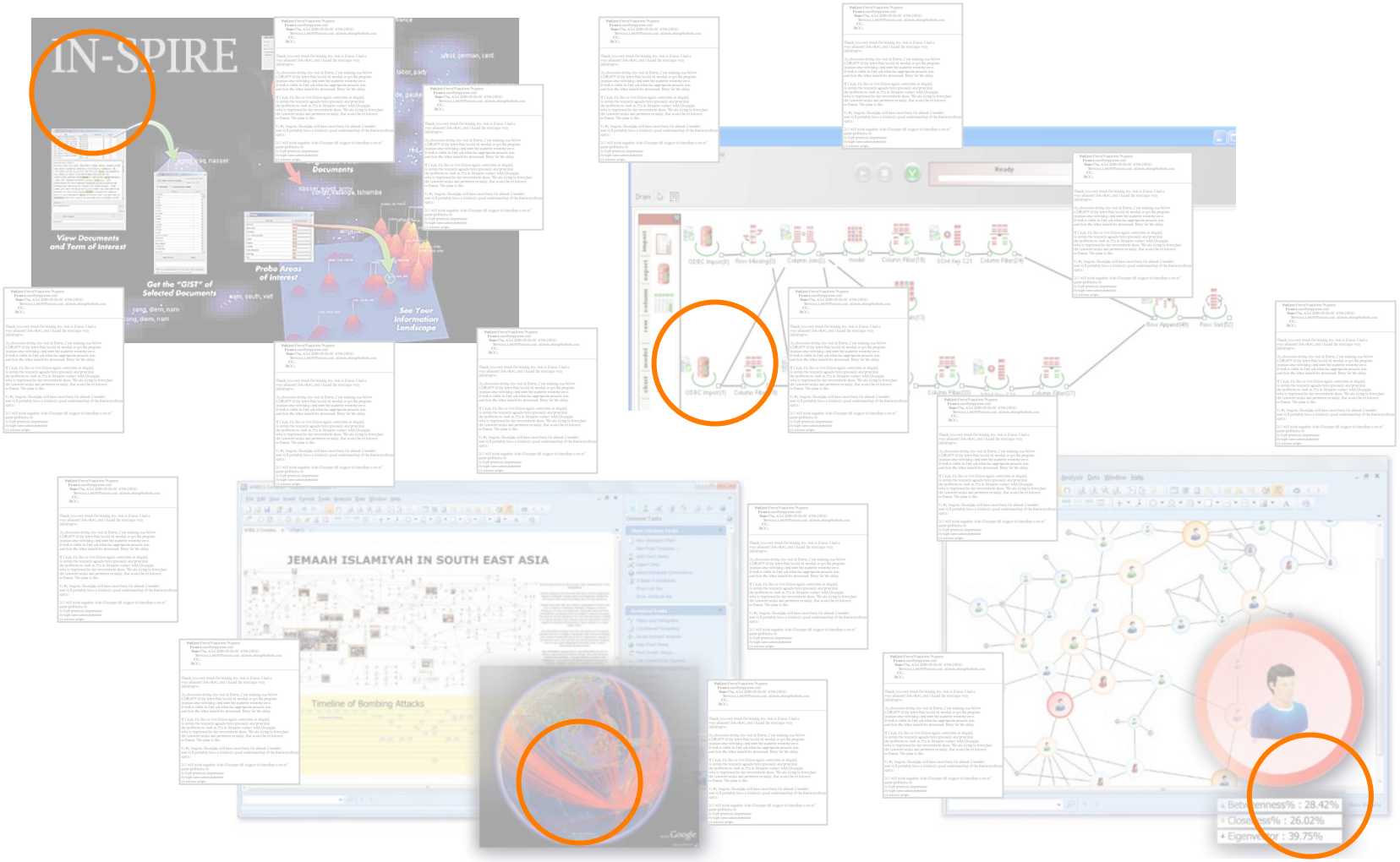
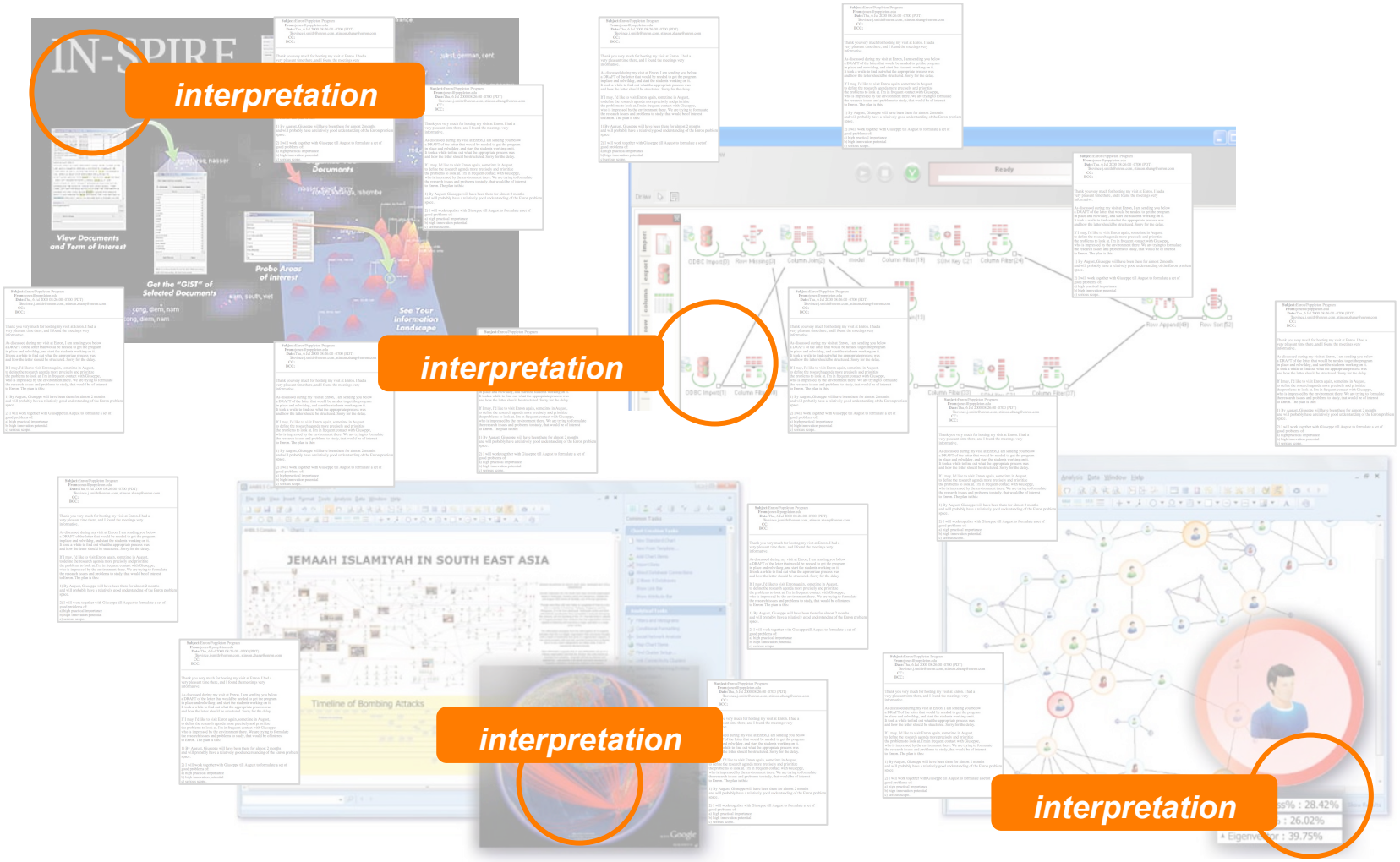


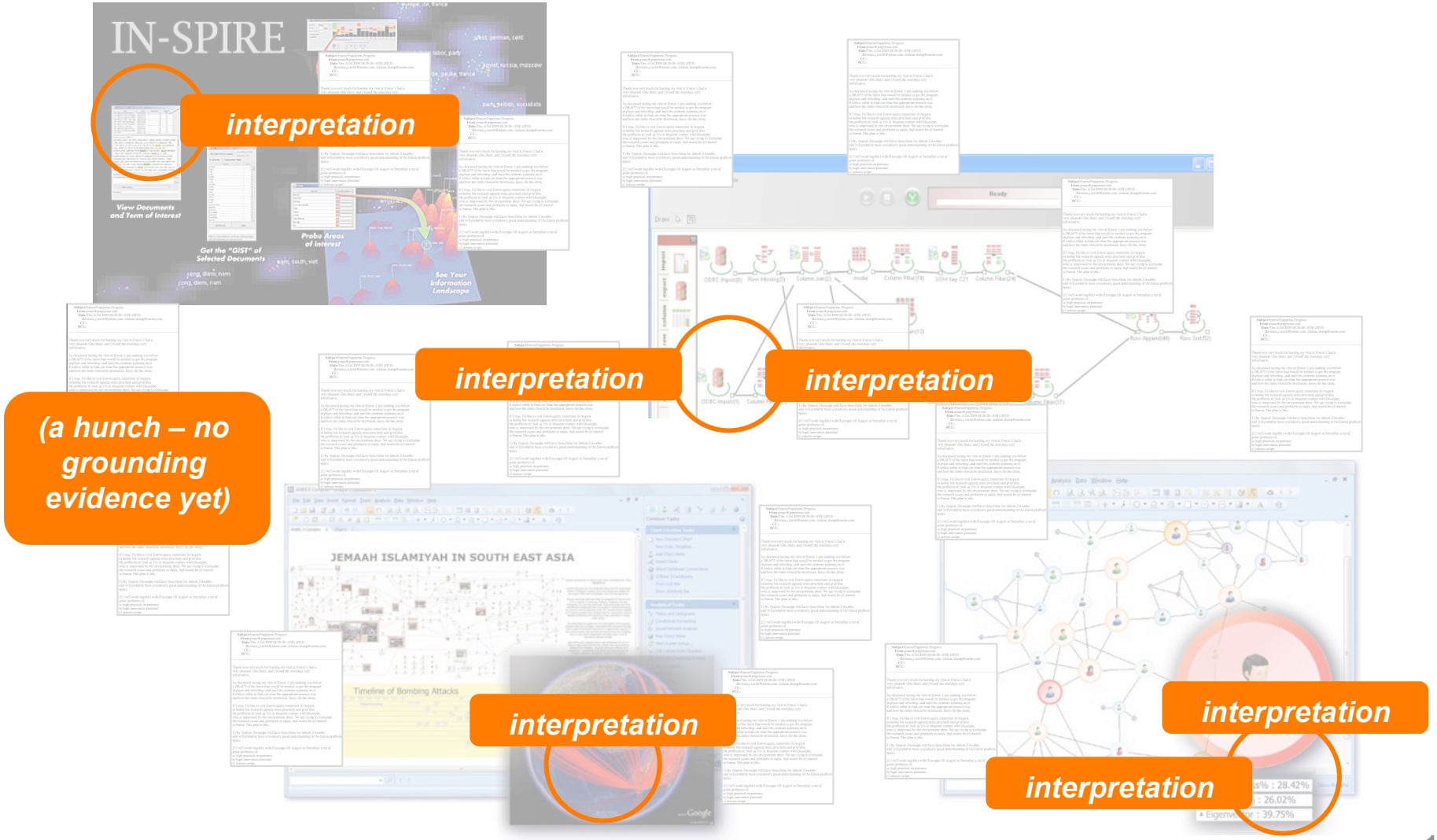
Where our tools fit: making *meaningful connections* between information elements…



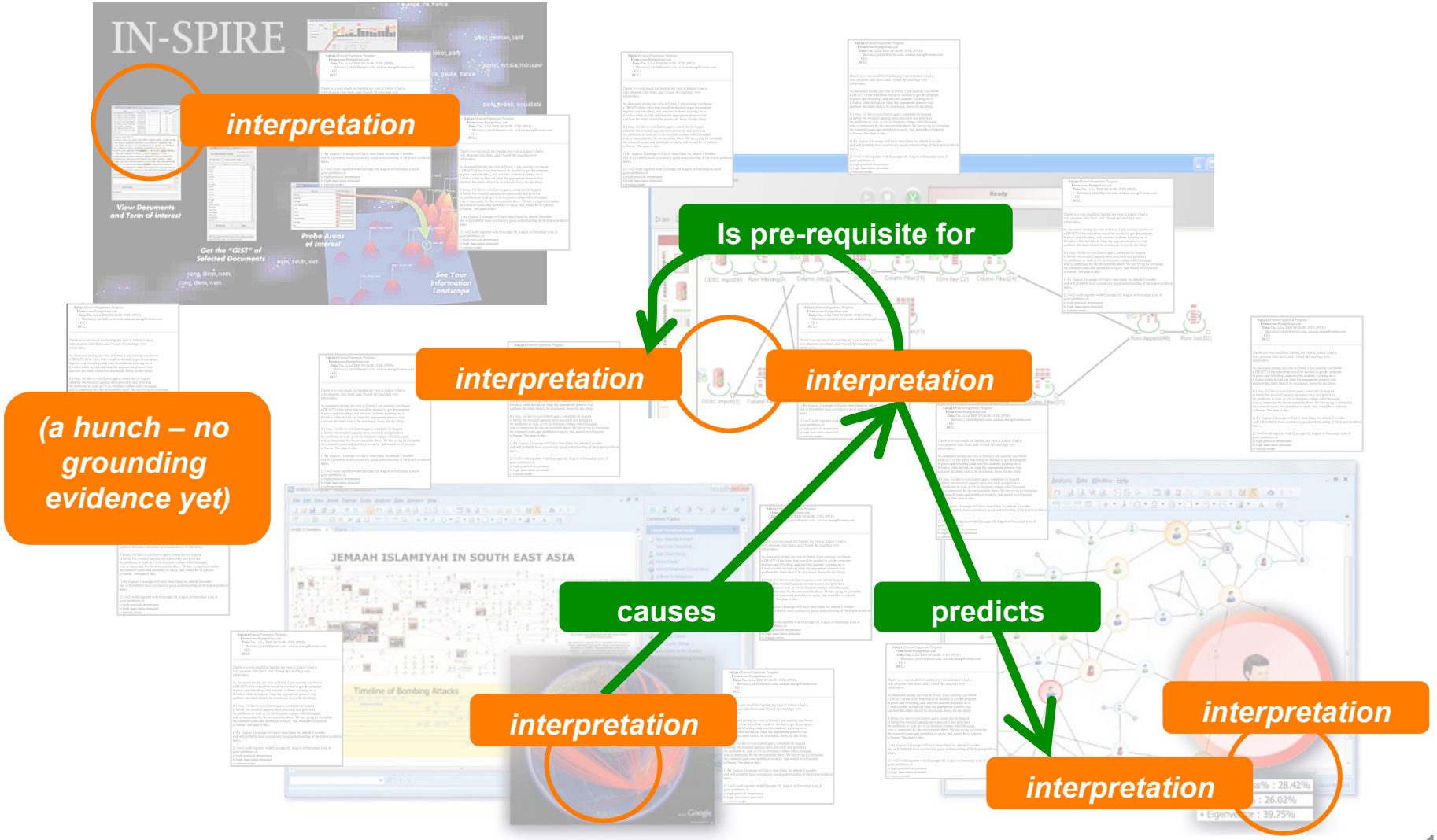
Where our tools fit: making *meaningful connections* between *interpretations*



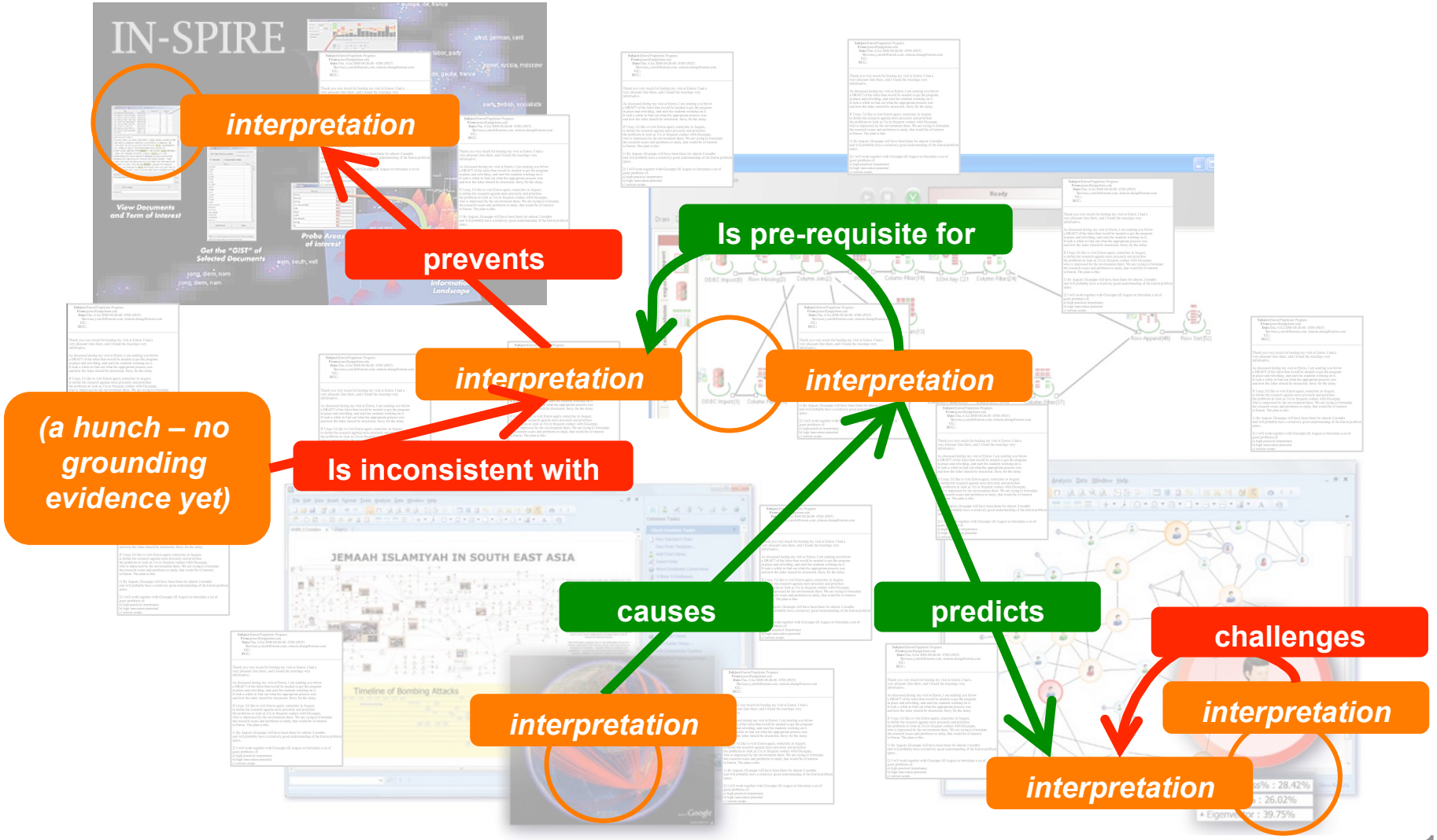
Where our tools fit: making *meaningful connections* between *interpretations*



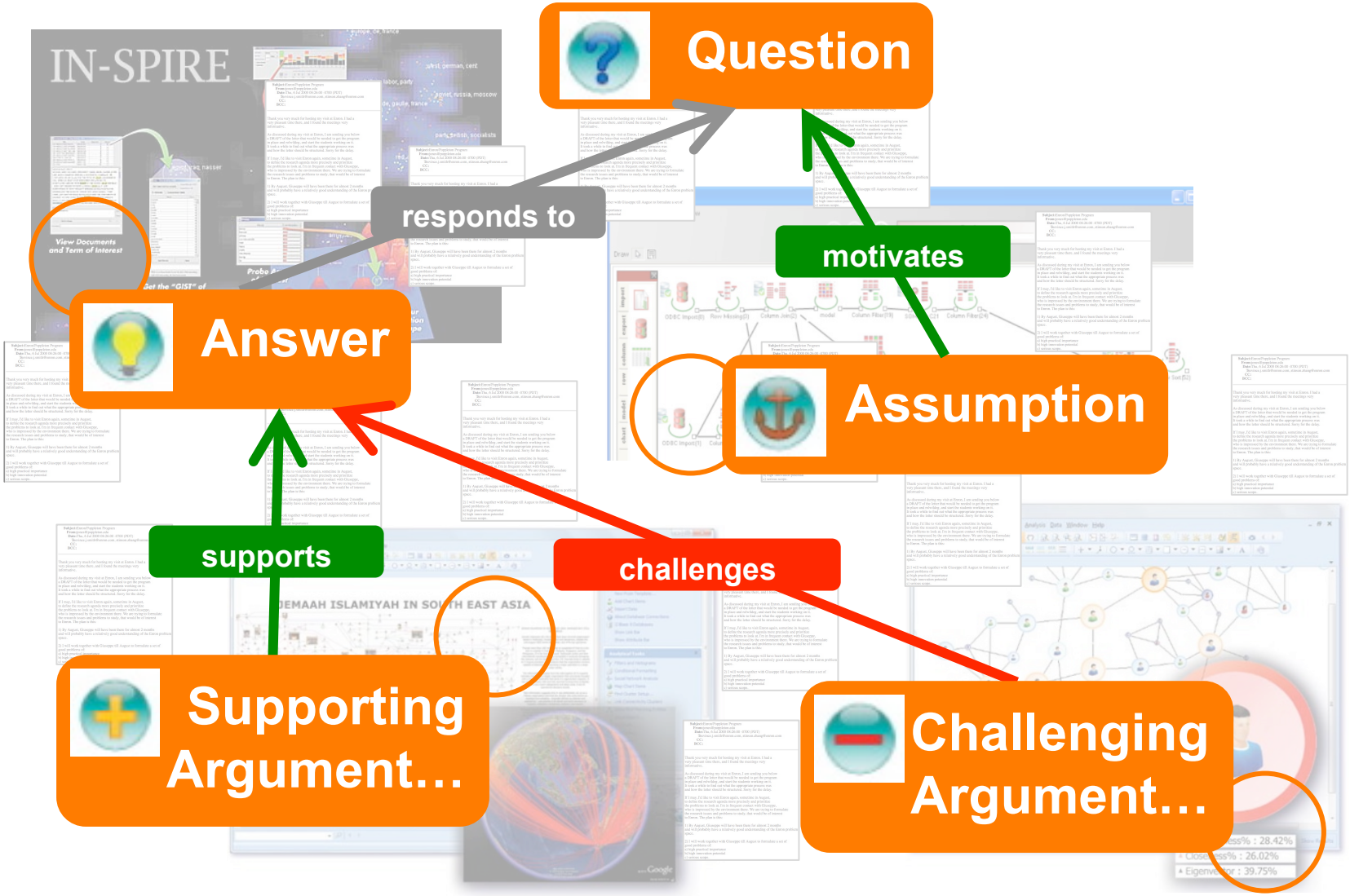
Where our tools fit: making *meaningful connections* between information elements



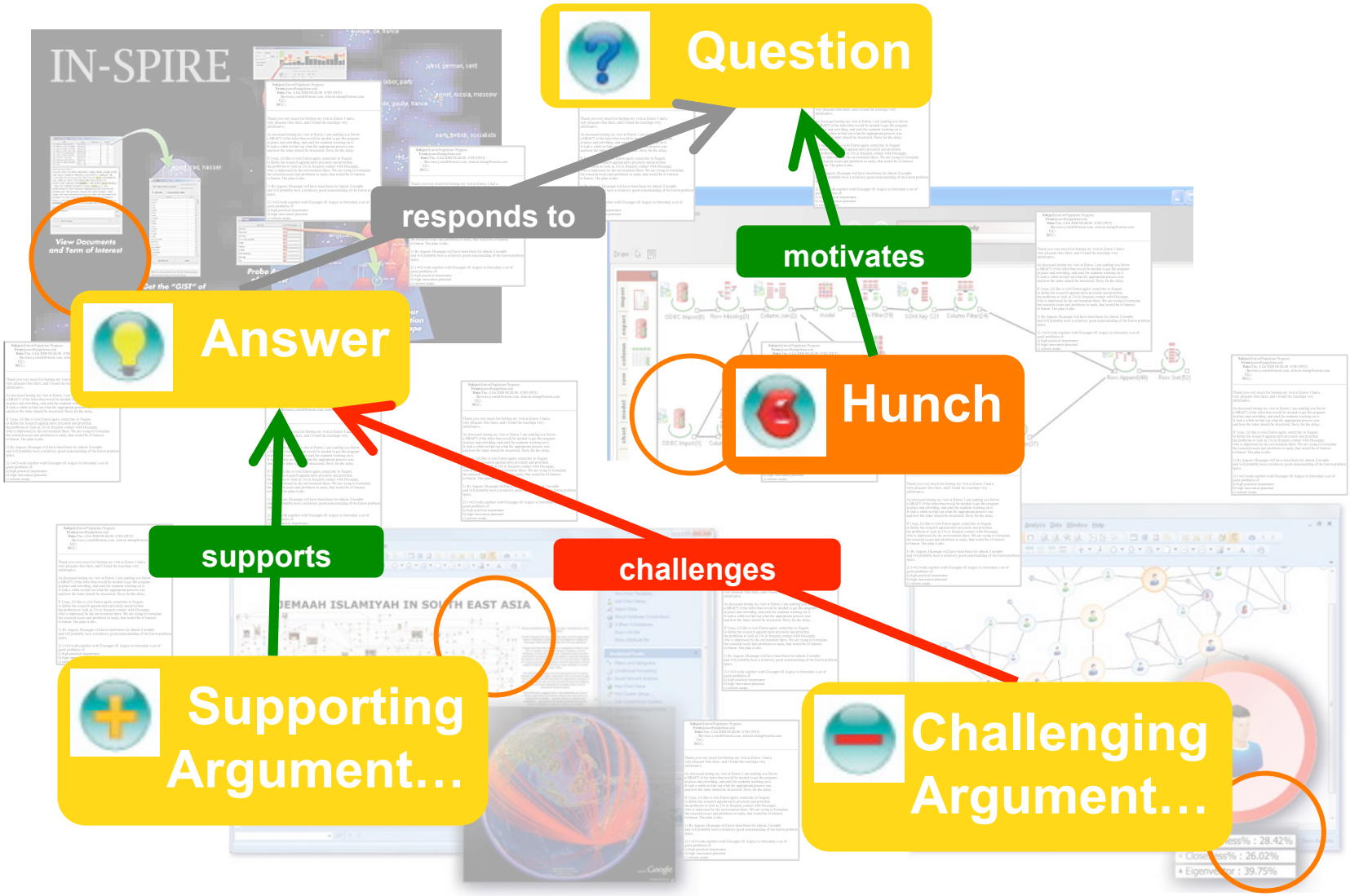
Where our tools fit: making *meaningful connections* between information elements



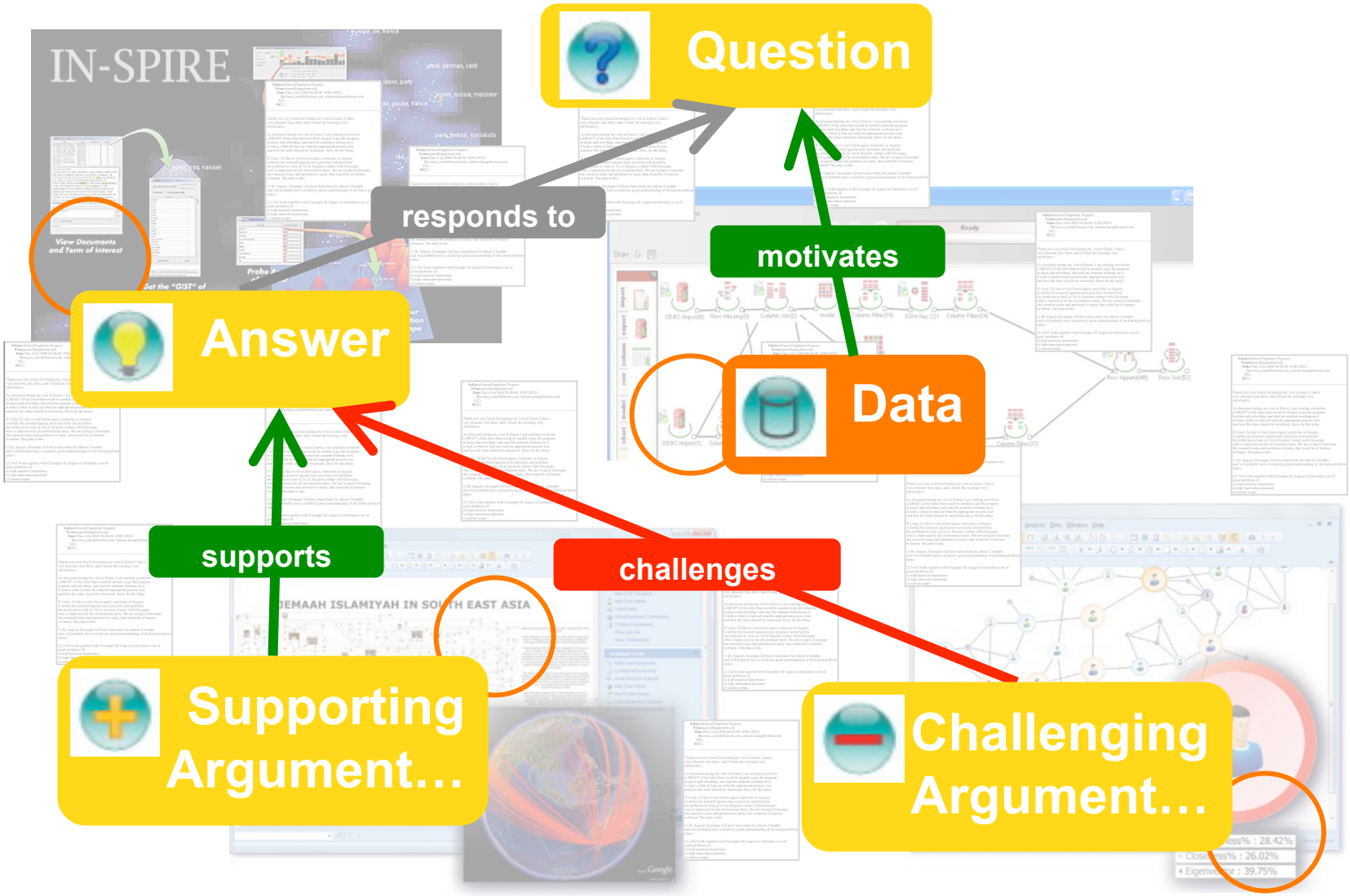
Where our tools fit: building the story that makes sense of the evidence… i.e. *plausible arguments*



Where our tools fit: building the story that makes sense of the evidence… i.e. *plausible arguments*

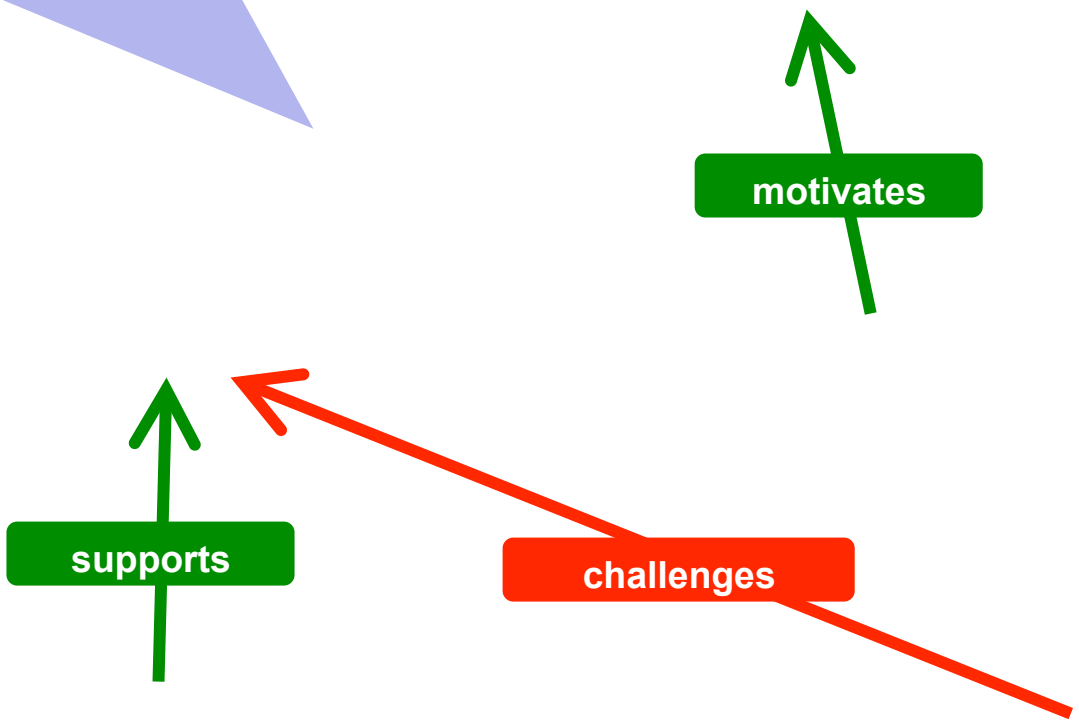


Where our tools fit: building the story that makes sense of the evidence… i.e. *plausible arguments*

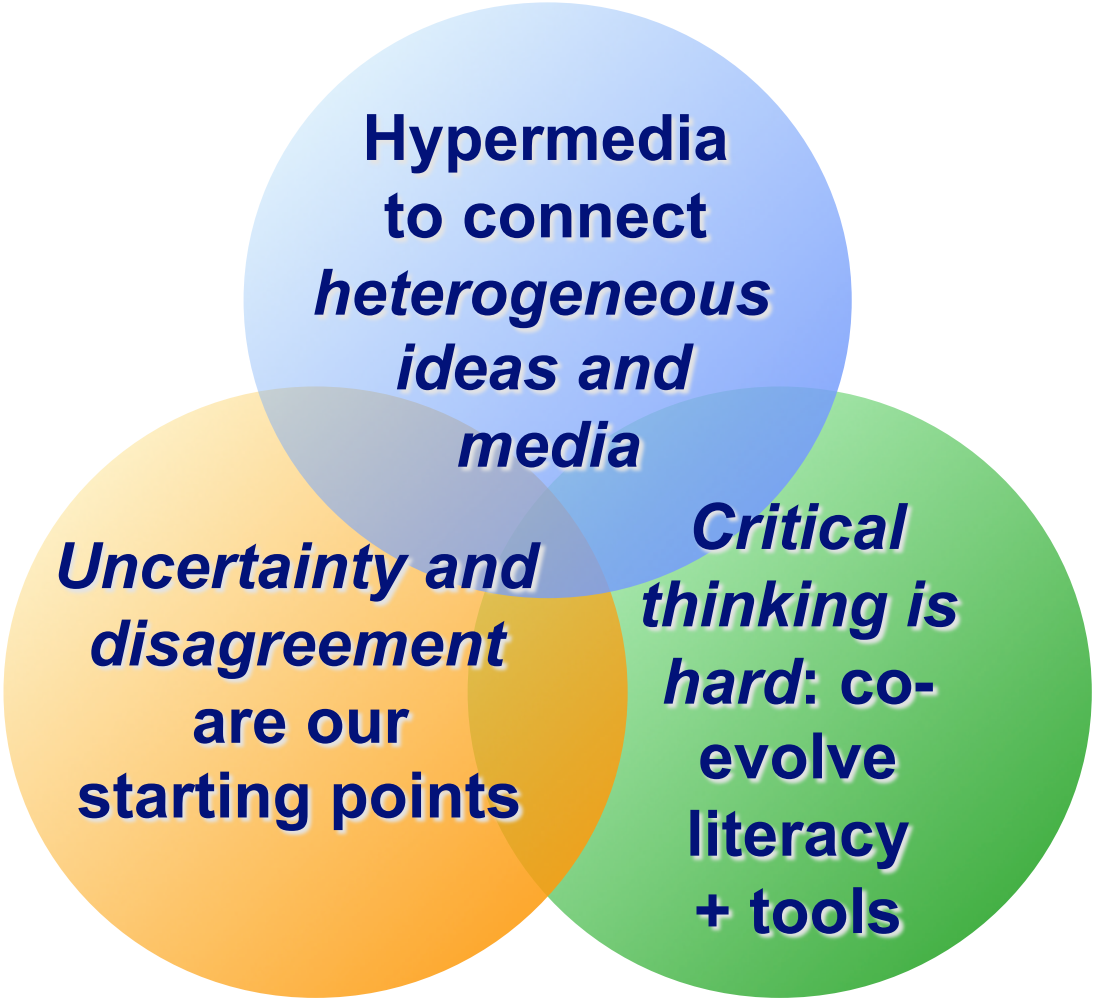


Where our tools fit: building the story that makes sense of the evidence… i.e. *plausible arguments*

What *kinds of arguments* underpin these claimed relationships? (Argumentation Schemes)



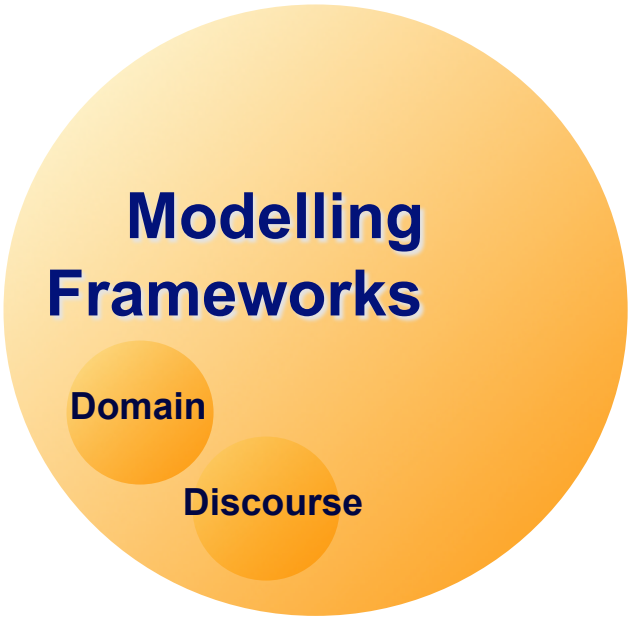
The building blocks of this approach



how to deliver the vision?

Human-Centred Computing for Sensemaking

(including Design Rationale, and arguably, many RE tools?)



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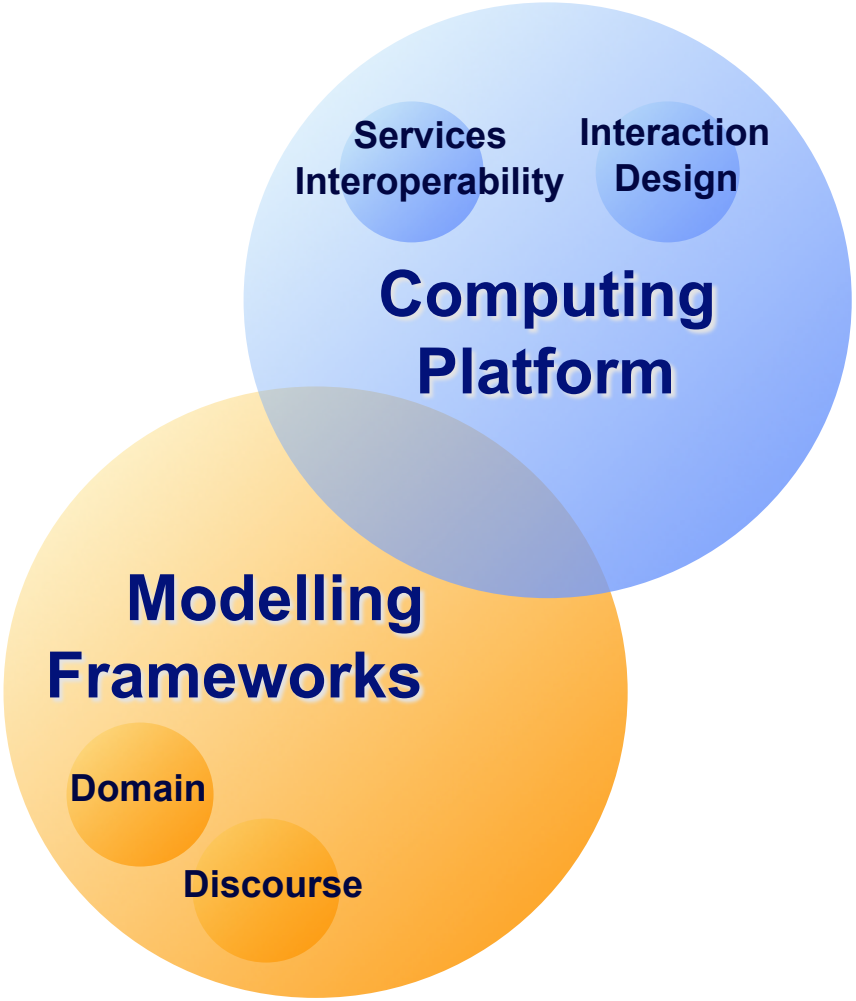

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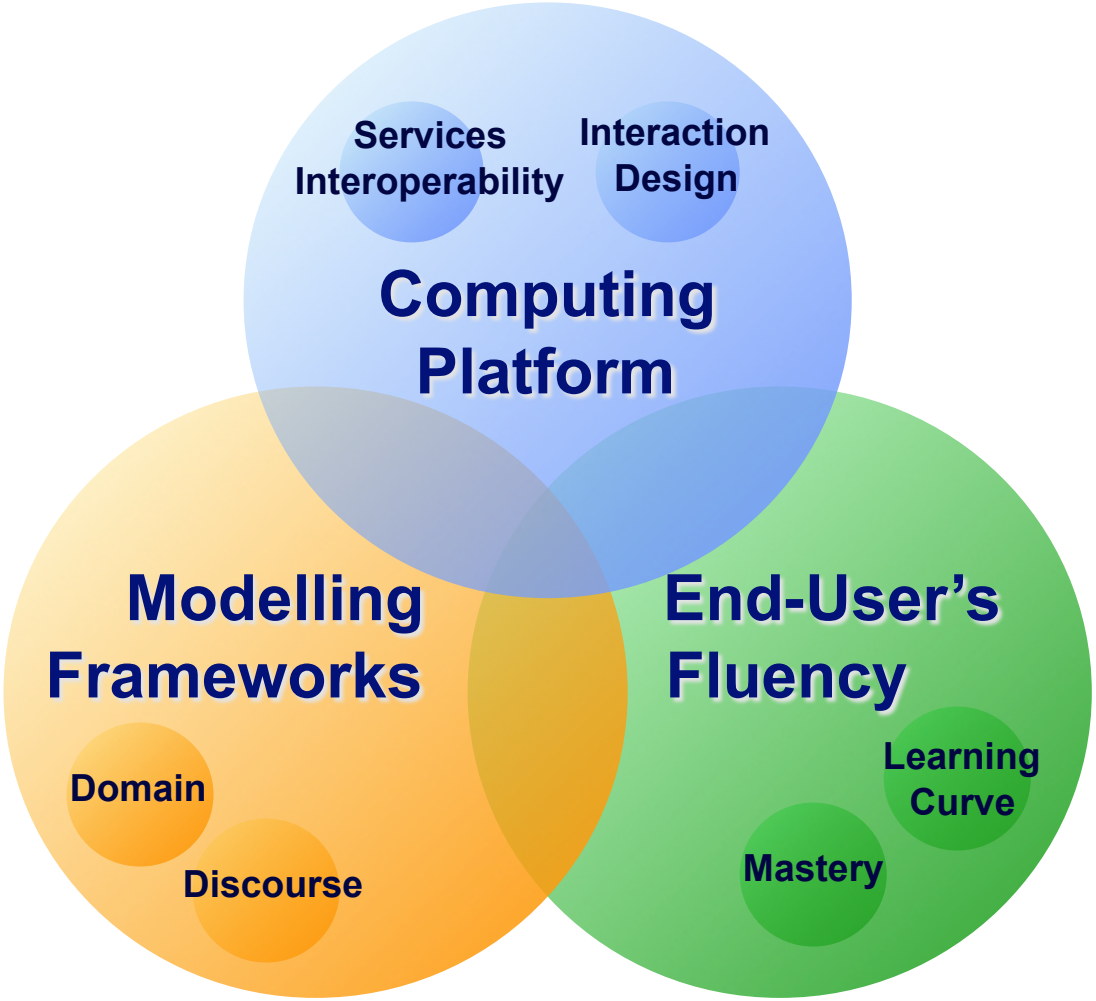
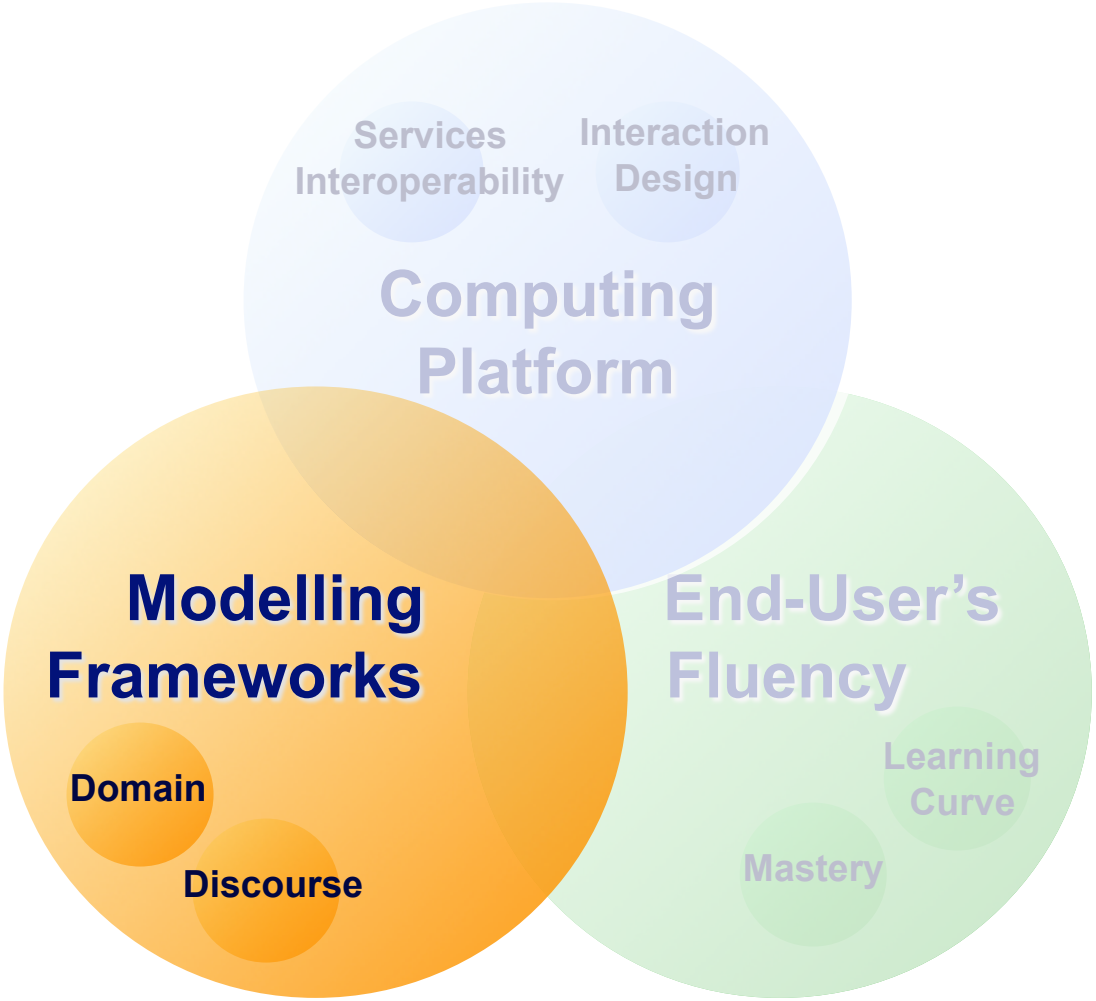
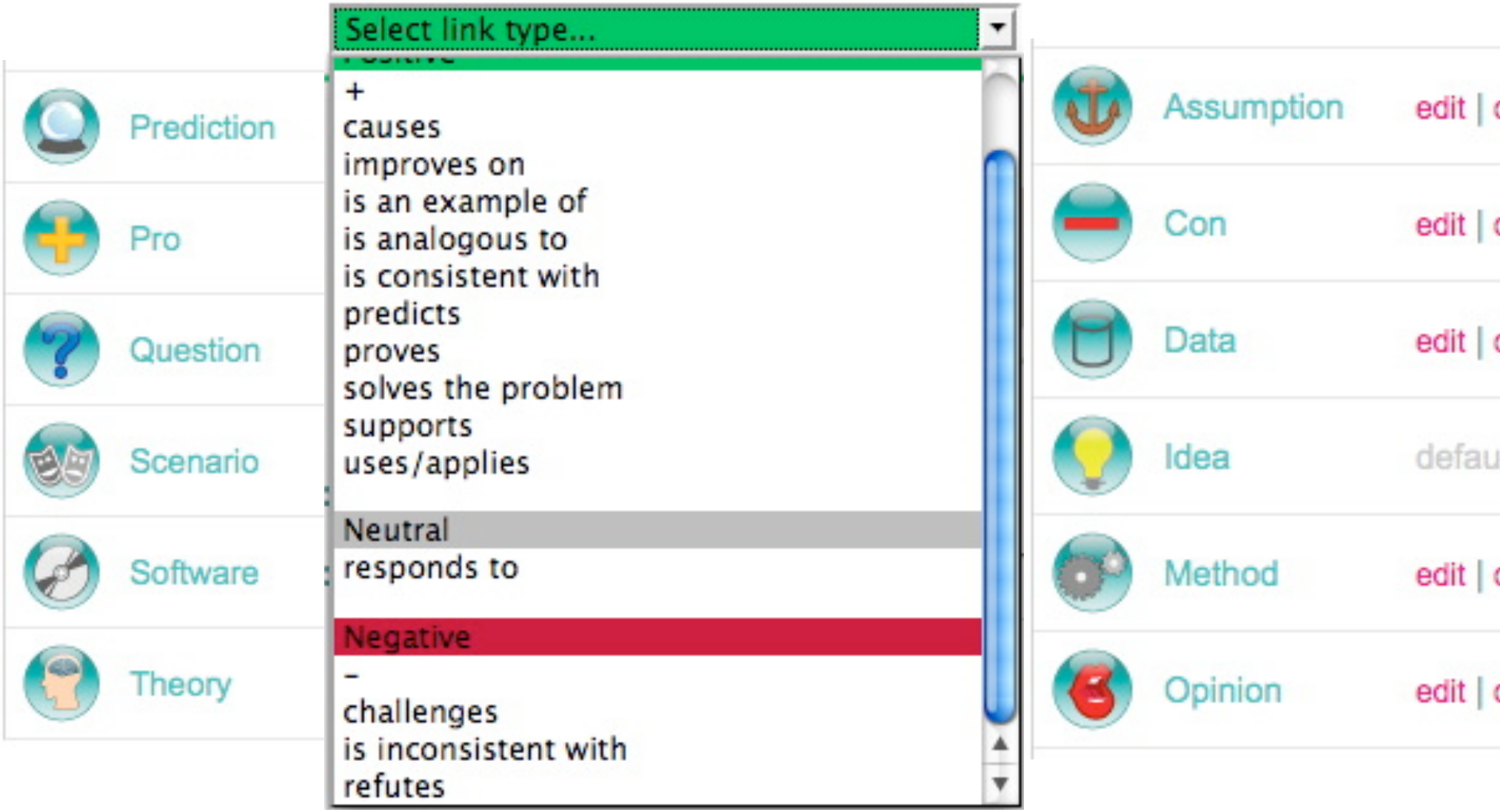


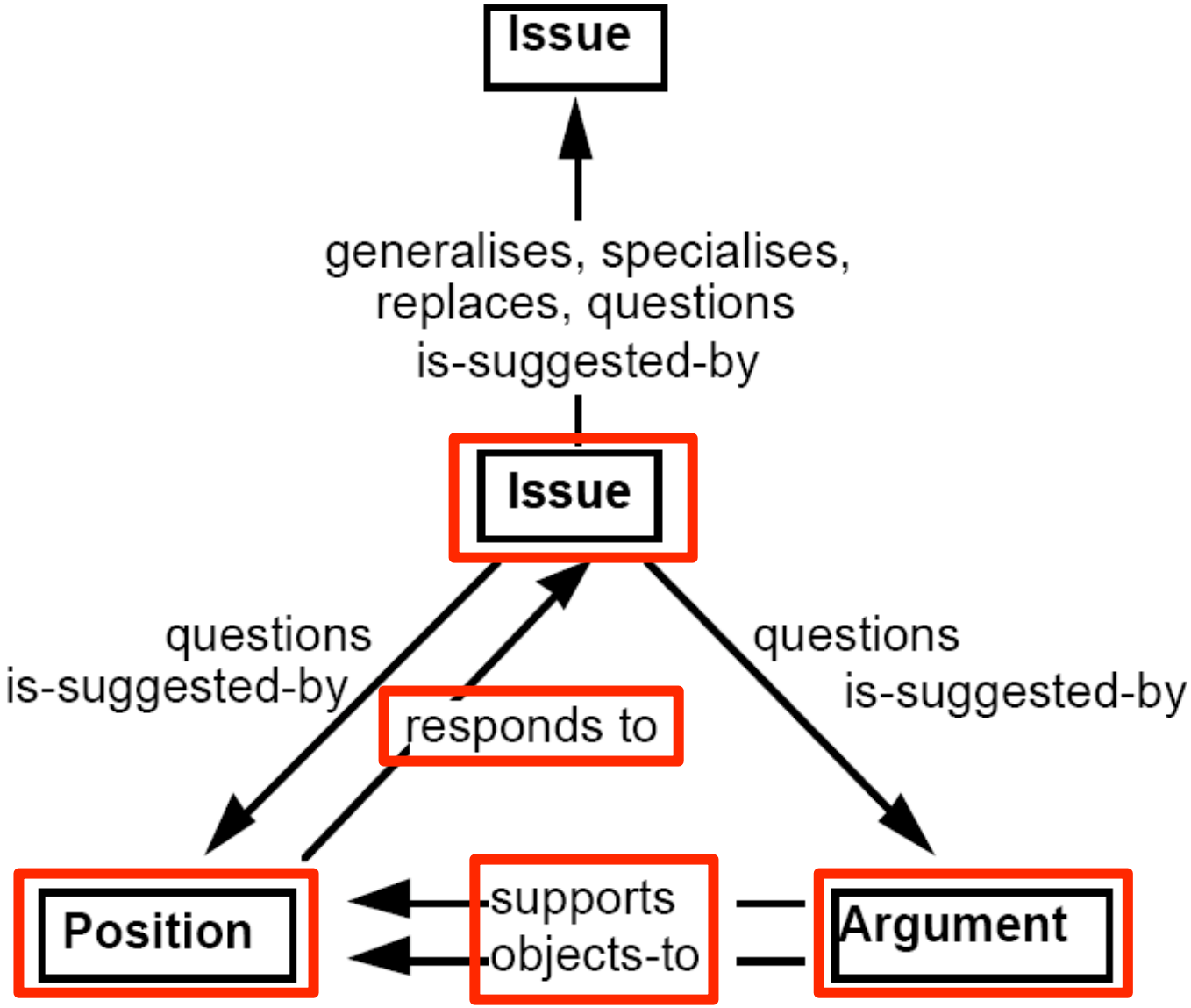
Human-Centred Computing for Sensemaking



Analyst-defined visual connection language

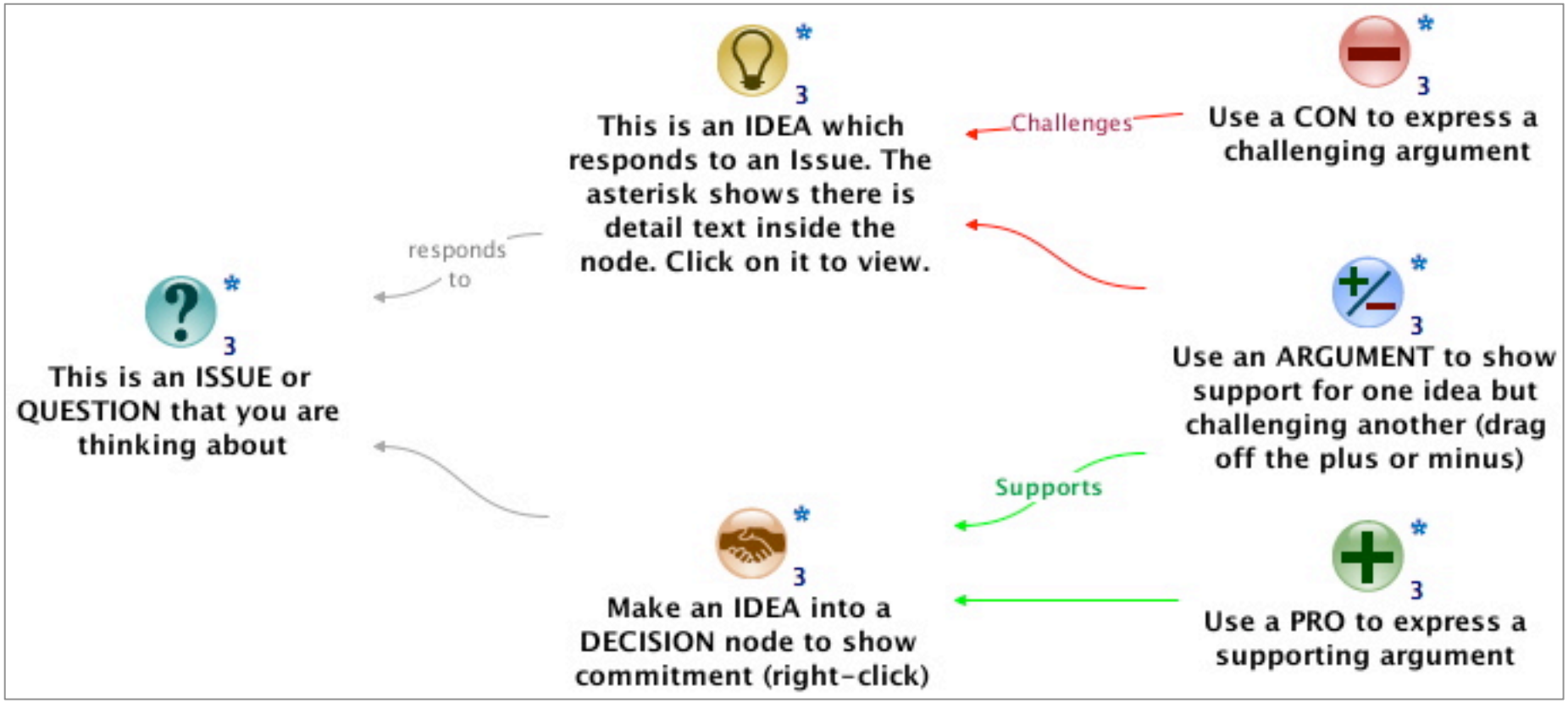


Horst Rittel's IBIS (1972): Issue-Based Information System



Compendium Java application

visual hypermedia for managing the connections between ideas flexibly

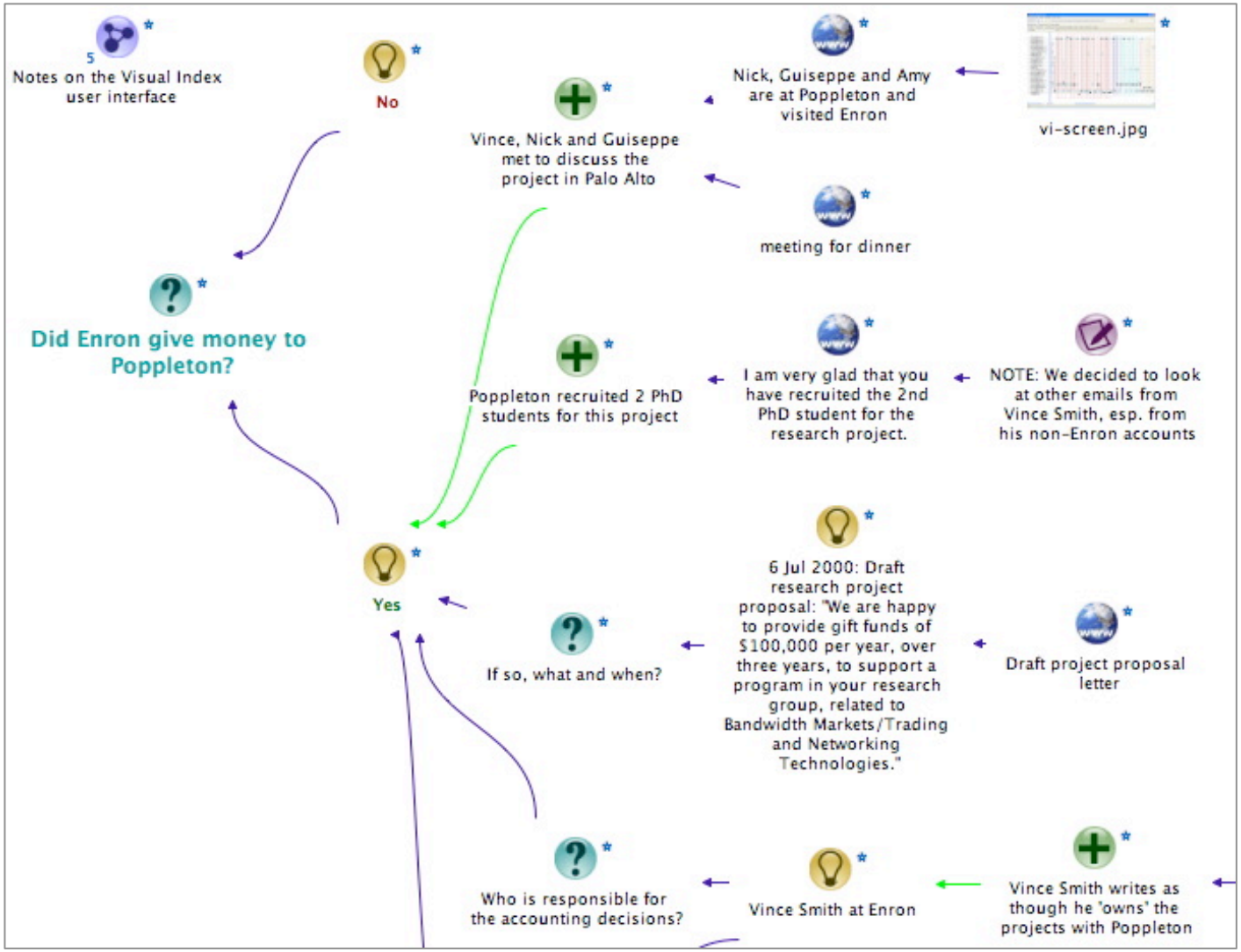


Buckingham Shum, S., Selvin, A., Sierhuis, M., Conklin, J., Haley, C. and Nuseibeh, B. (2006). **Hypermedia Support for Argumentation-Based Rationale: 15 Years on from gIBIS and QOC**. In: *Rationale Management in Software Engineering* (Eds.) A.H. Dutoit, R. McCall, I. Mistrik, and B. Paech. Springer-Verlag: Berlin. http://oro.open.ac.uk/3032

example from yesterday's Enron exercise

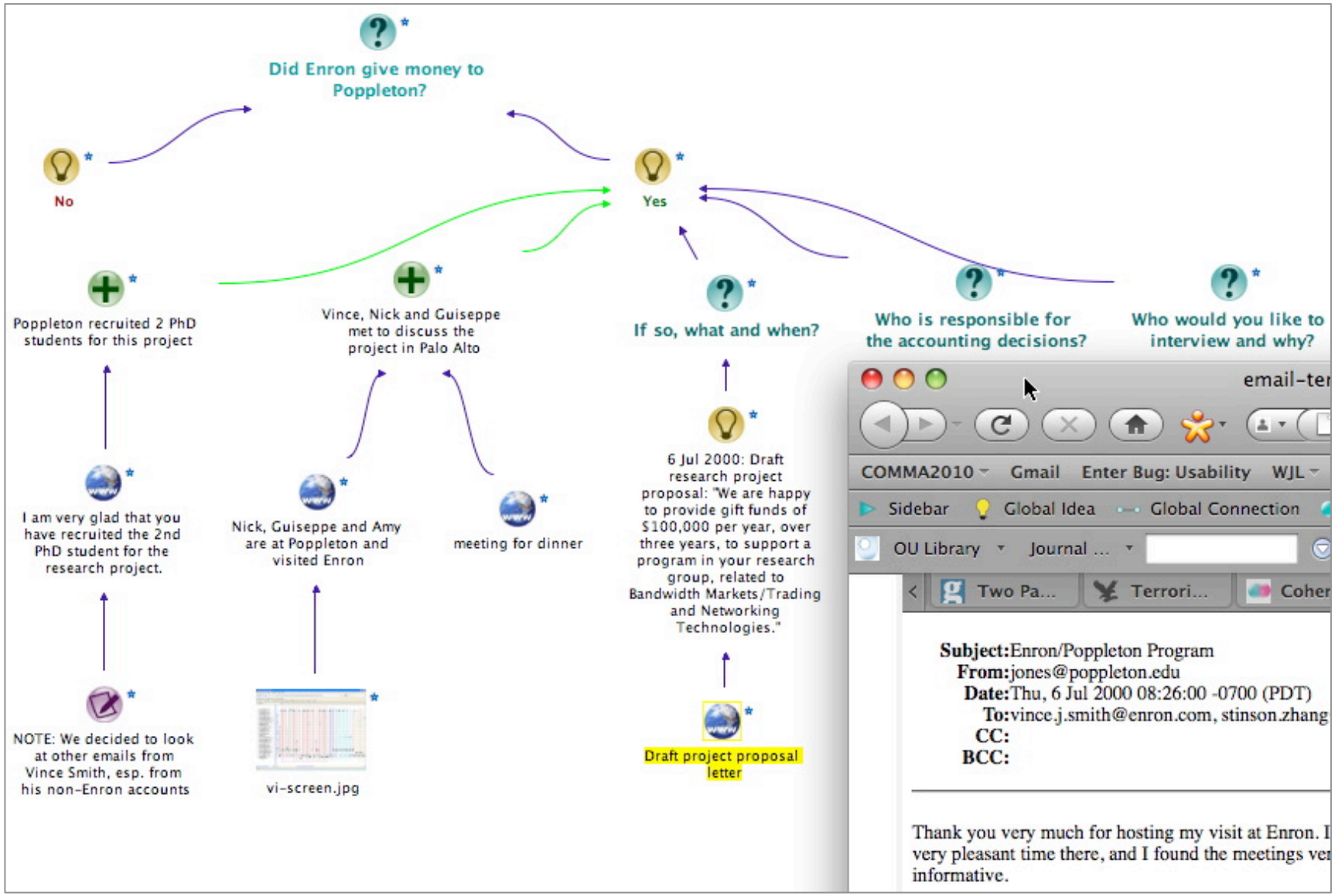
Using Compendium as a workspace to build the emerging "plausible narrative"

Enron dataset, as used in Simon Attwell's Visual Threads workshop (left-right layout)

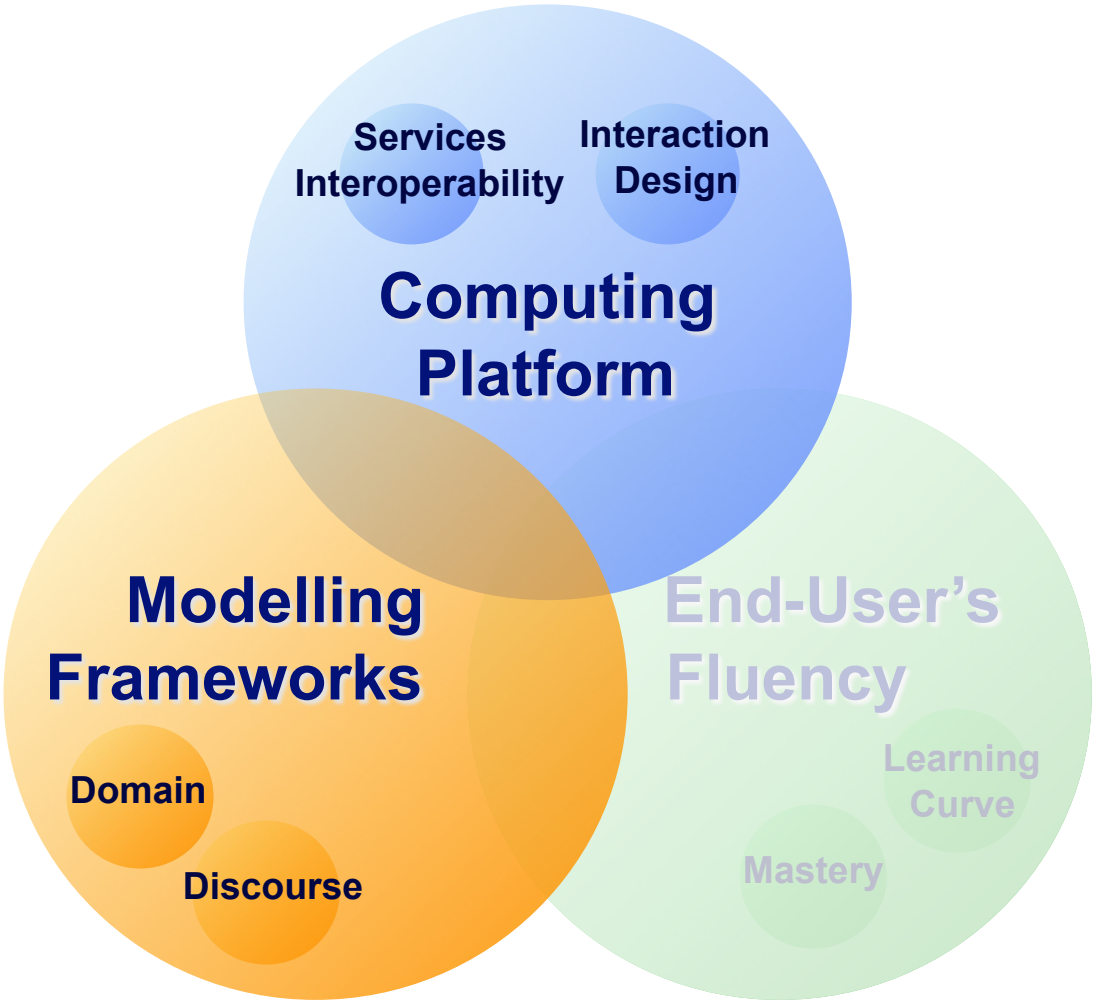


Using Compendium as a workspace to build the emerging "plausible narrative"

Enron dataset, as used in Simon Attwell's Visual Threads workshop (vertical layout)



Human-Centred Computing for Sensemaking



Wall-size displays: Robert Horn

International Futures Forum

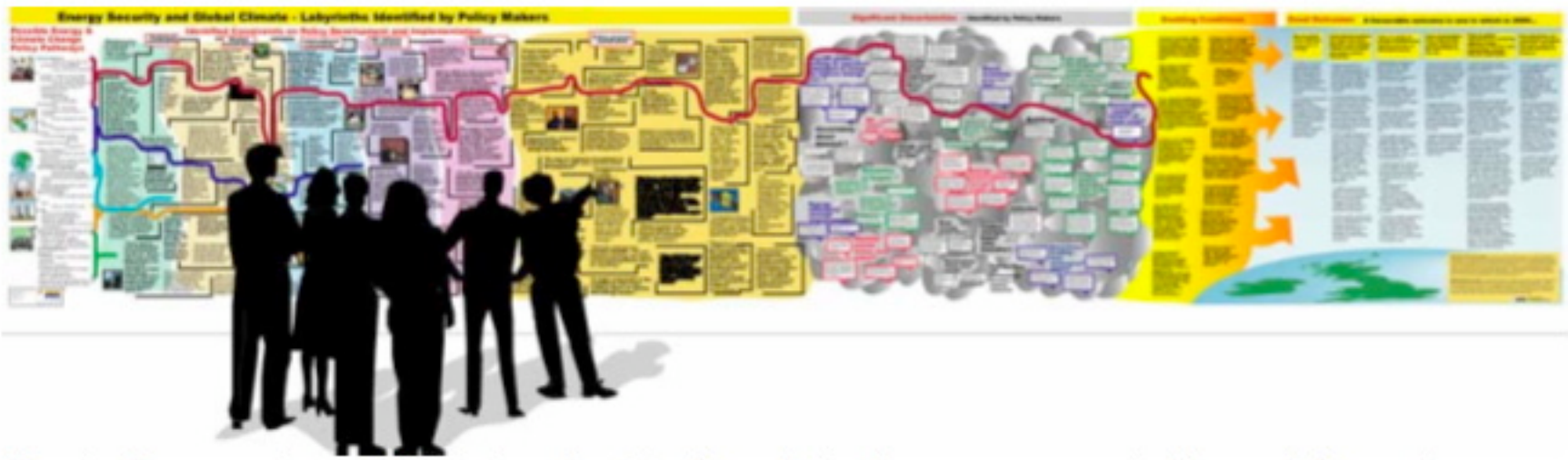
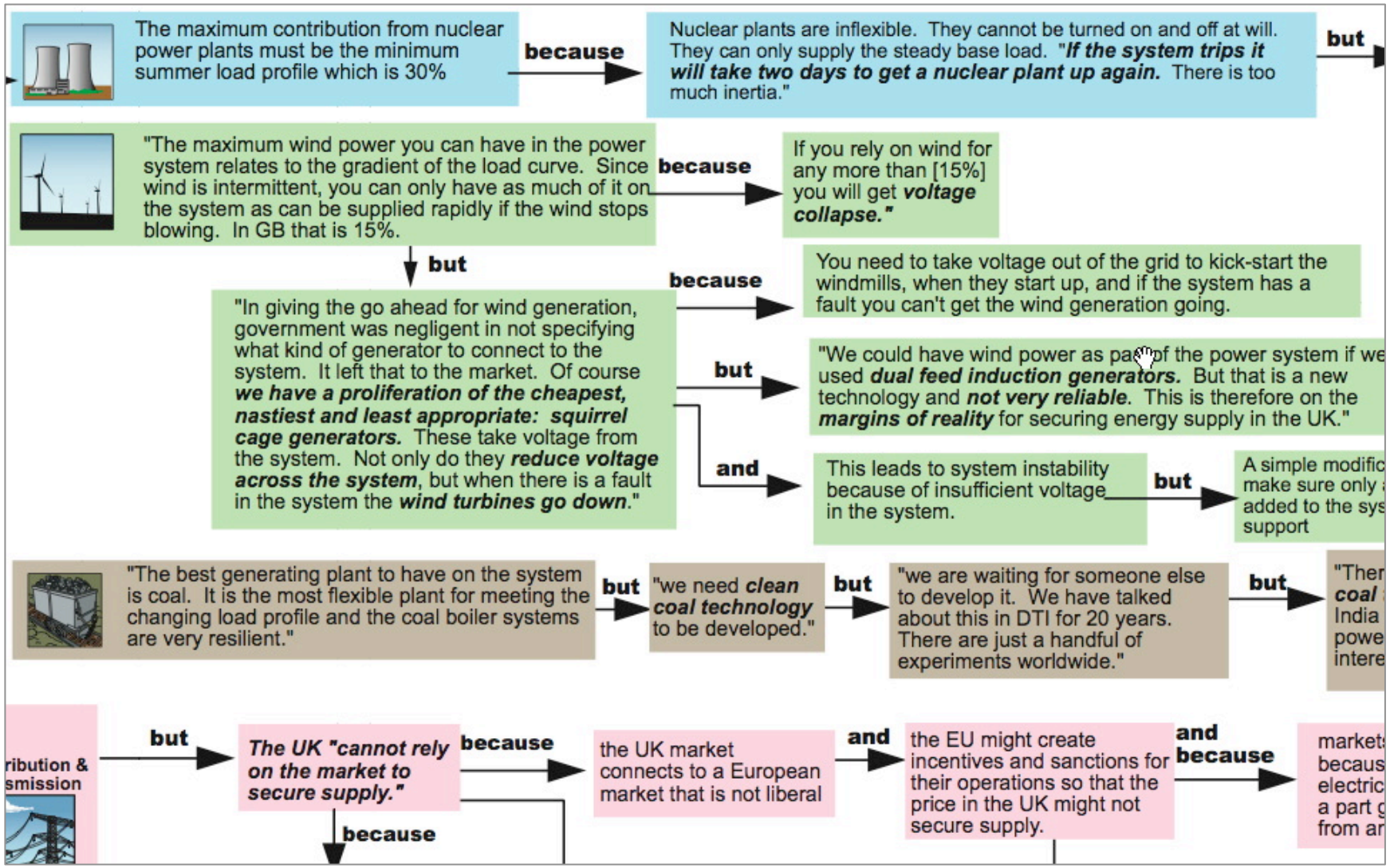
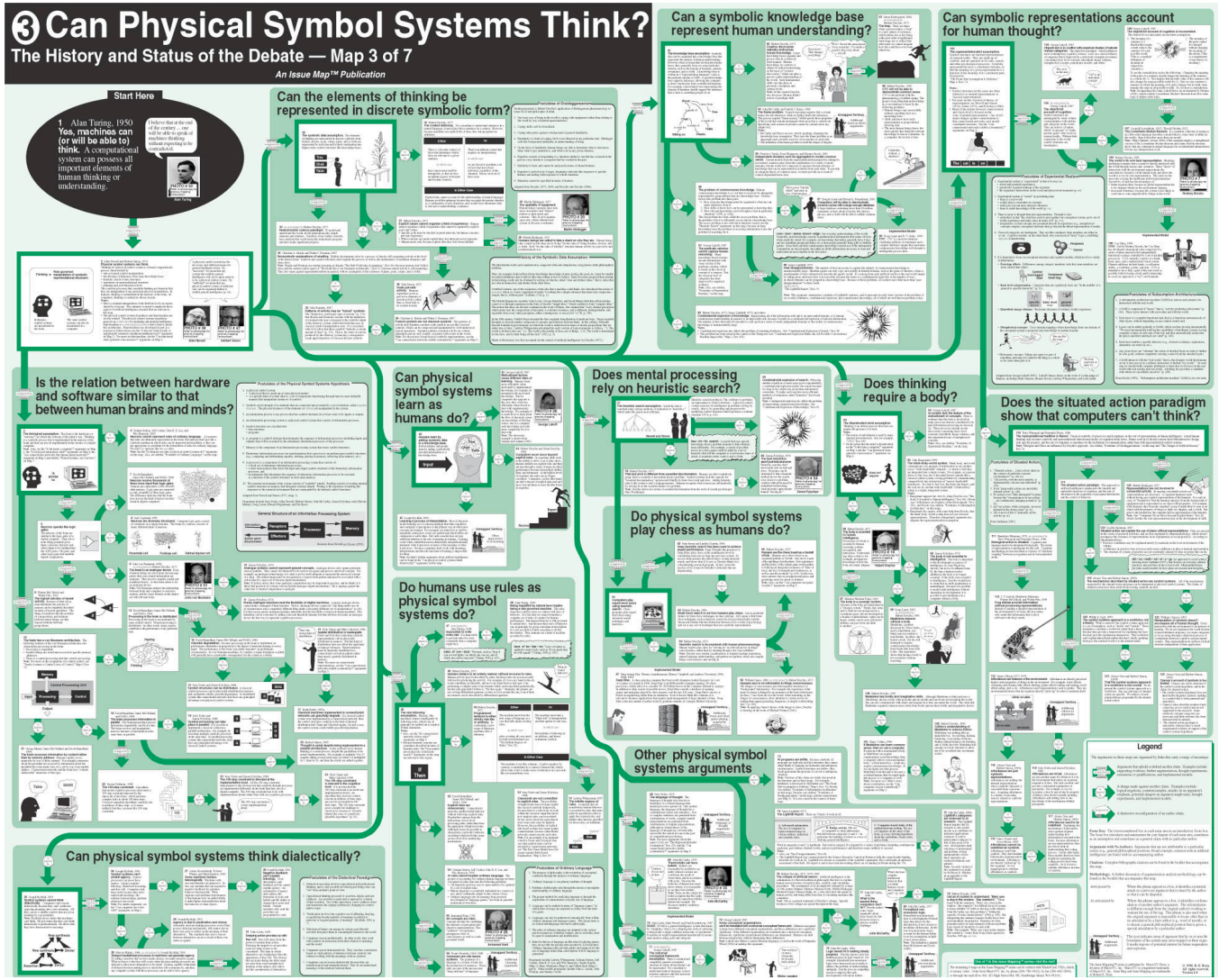


Fig 1: One version of the 'mirror': data from interviews represented in an information mural

Wall-size displays: Robert Horn



What if we could get search results like this?… (Robert Horn)



One of seven maps in the *Mapping Great Debates: Can Computers Think?* Series. MacroVU Press. www.macrovu.com (Horn, 2003; Yoshimi, 2006)

③ Can Physical Symbol Systems Think?

The History and Status of the Debate — Map 3 of 7

An Issue Map™ Publication

Start Here

1 Alan Turing, 1950
Yes, machines can (or will be able to) think. A computational system can possess all important elements of human thinking or understanding.

I believe that at the end of the century ... one will be able to speak of machines thinking without expecting to be contradicted.

PHOTO # 50
Refer to photocopy for precise cropping instructions.
Alan Turing

Can the elements of thinking be represented in discrete symbolic form?

Postulates of Dreidleggerianism

History of the Symbolic Cells Assumption

Is the relation between hardware and software similar to that between human brains and minds?

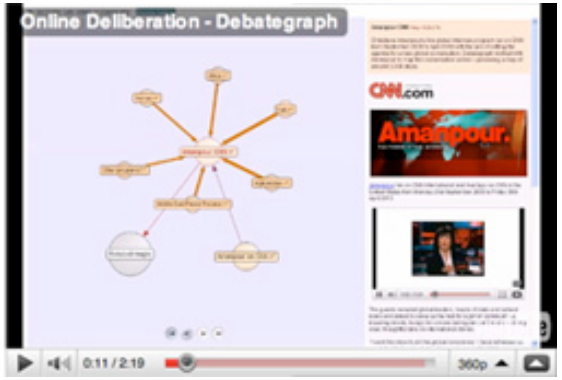
Postulates of the Physical Symbol Systems Hypothesis

Can physical symbol systems learn as humans do?

PHOTO # 28
Refer to photocopy for precise cropping instructions.
George Lakoff

Does mental rely on heuris

There are now a number of tools for mapping issues, dialogue and argumentation



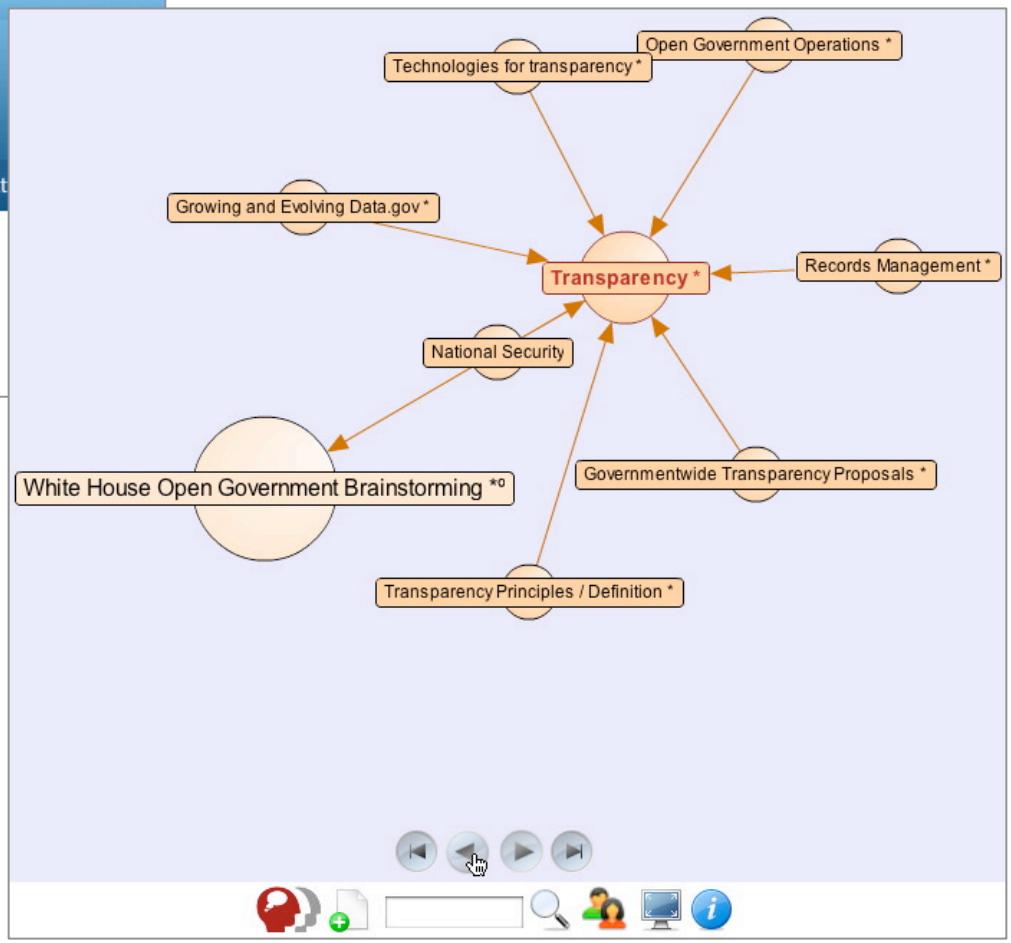
Online Deliberation: Emerging Tools Workshop

Online Deliberation 2010, Leeds UK (30 June – 2 July)
www.olnet.org/odet2010

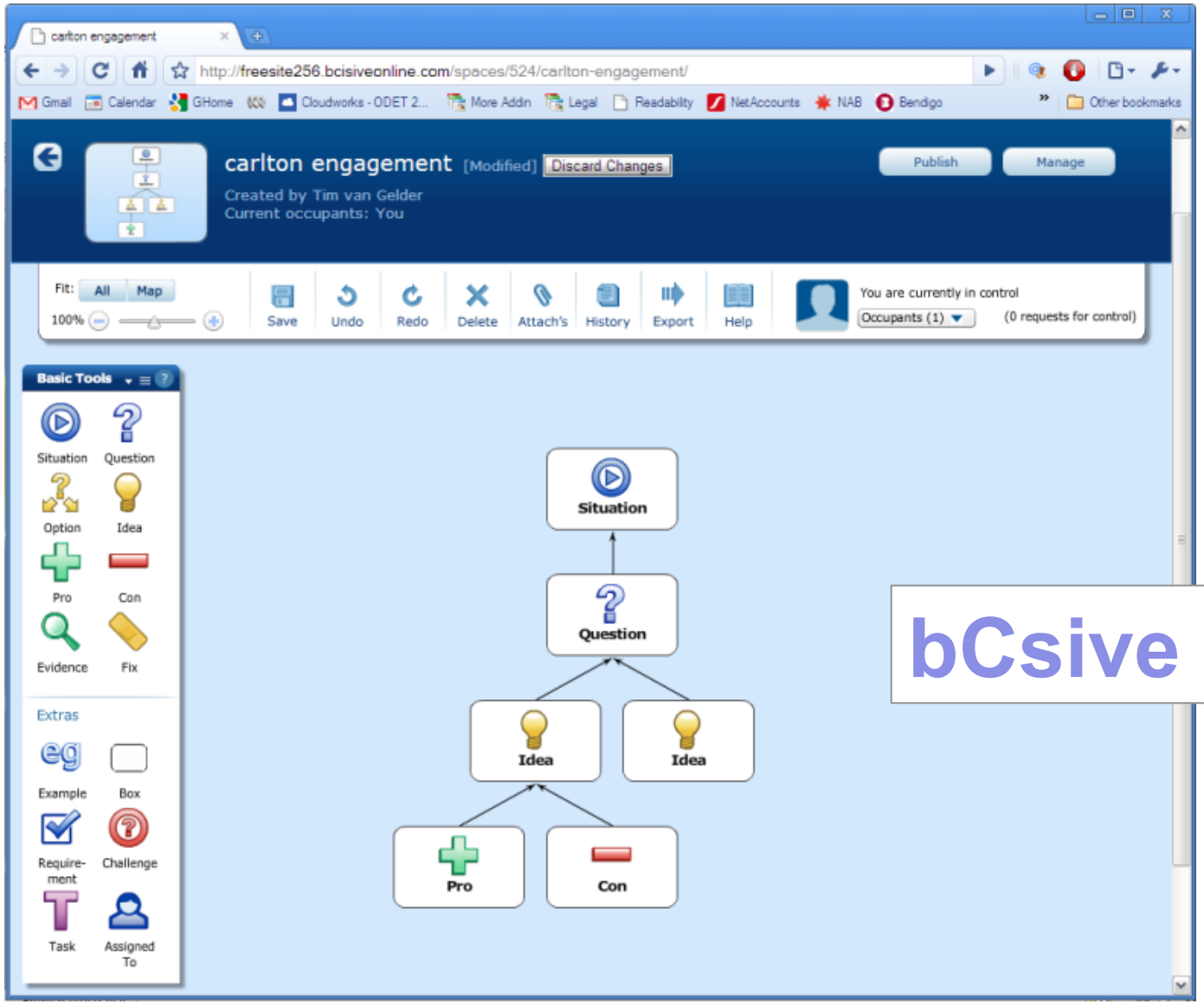
ESSENCE: E-Science, Sensemaking & Climate Change

ESSENCE workshop, KMI, Open University
http://events.kmi.open.ac.uk/essence

David Price, Debategraph.org



Tim van Gelder, AusThinkConsulting.com

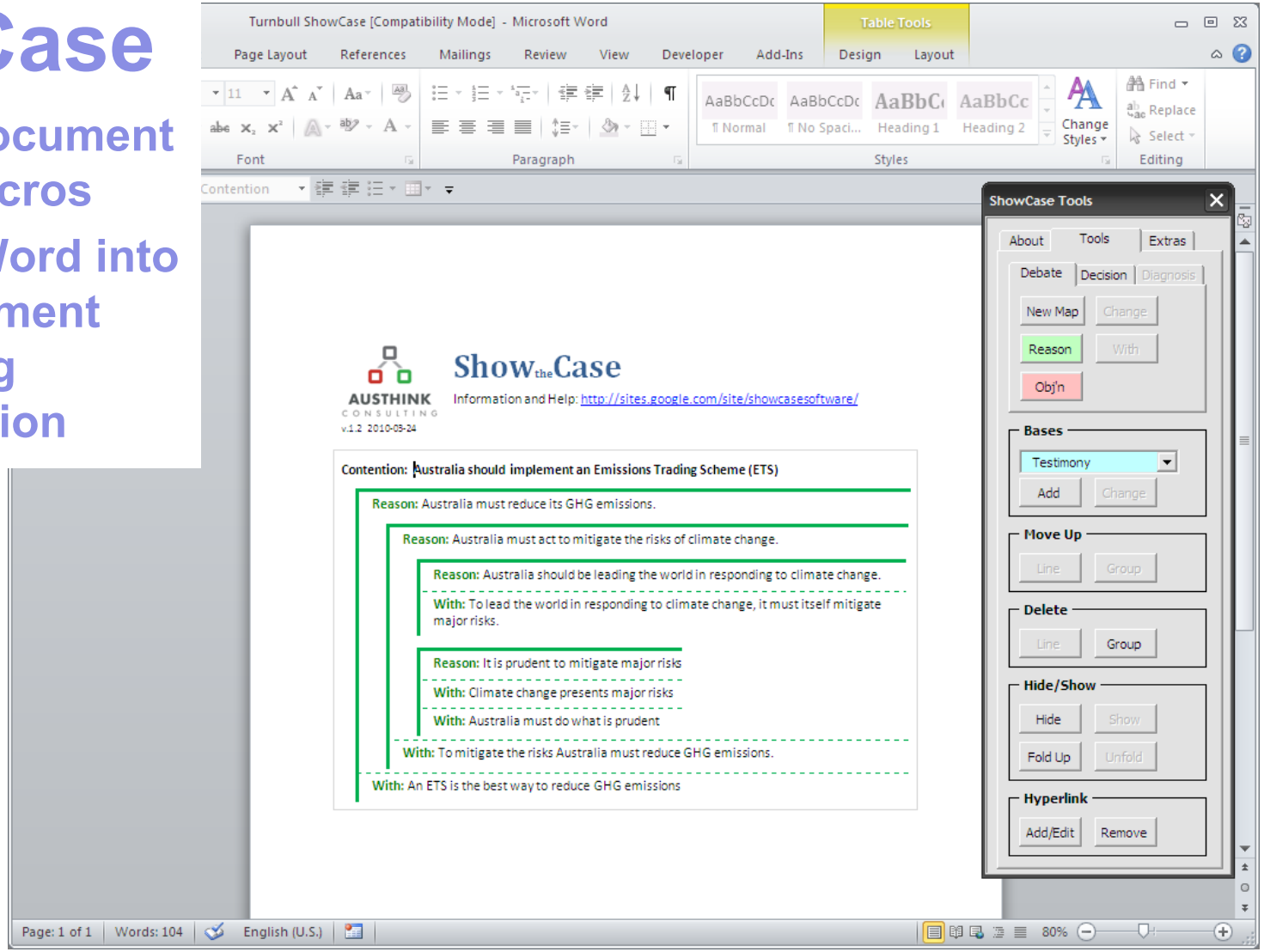


bCsive Online

Tim van Gelder, AusThinkConsulting.com

ShowCase

- Word document with macros
- Turns Word into an argument mapping application



Tim van Gelder, AusThinkConsulting.com

ShowCase

Which brings us to Wednesday's violence, and to our two reasons for hope.

Reason: First, Otunbayeva, a democrat and leader of the Social Democratic Party, has in the past demonstrated a willingness to leave government when it gets — for want of a better phrase — too draconian.

Examples...

Objection: Otunbayeva's predecessor, Akaev, was just as democratic when he came to power, but was pulled in an authoritarian direction.

Reason: Second, Otunbayeva will be receptive to the entreaties of foreign stakeholders, which are likely to include calls for democratic reforms within Kyrgyzstan.

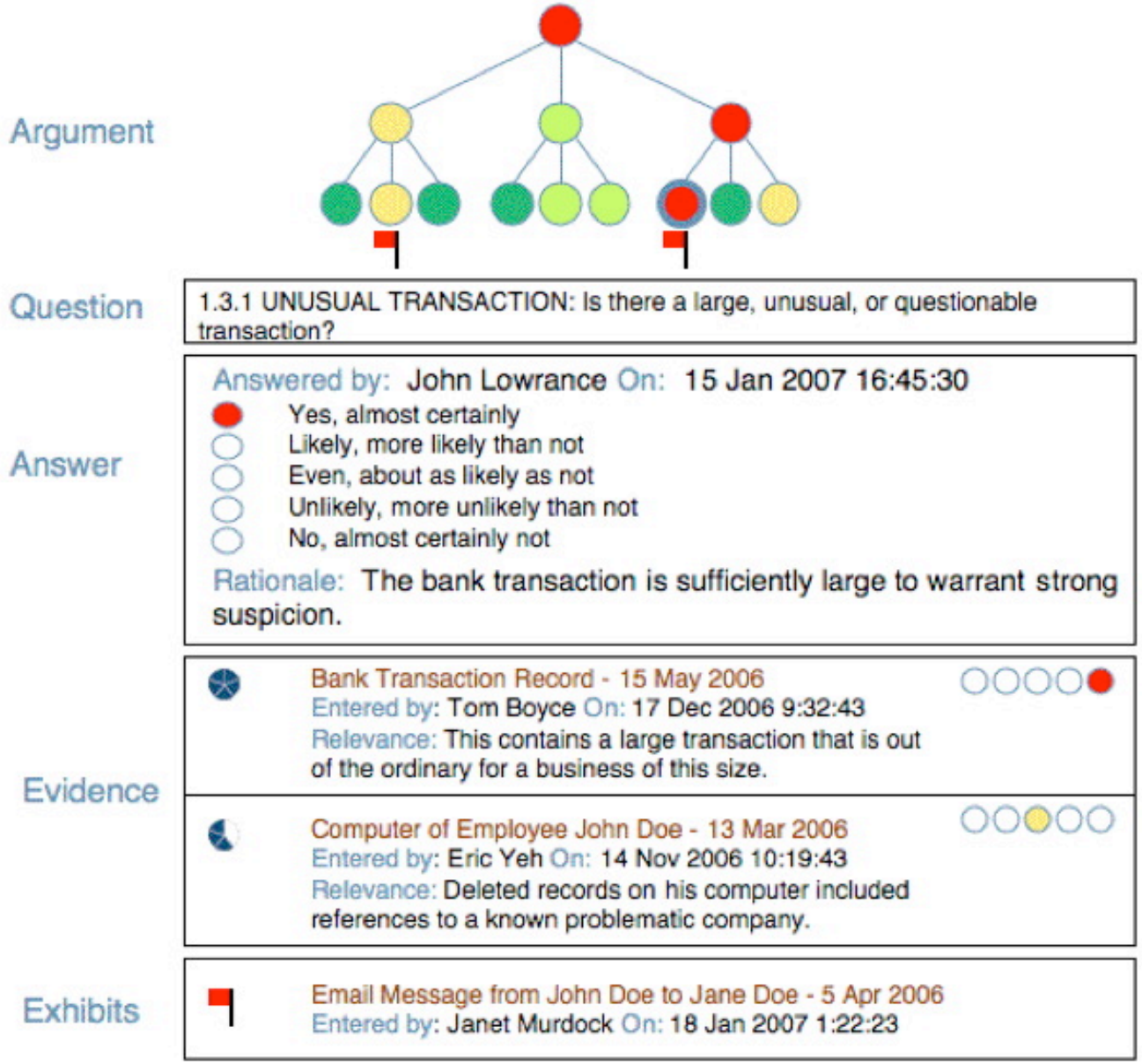
Reason...

Objection: Otunbayeva is only responding positively to calls to become democratic to extract aid and political recognition from Washington; this is unlikely to result in a more democratic government.

For now, we can only wait in anticipation.

SEAS: Structured Evidential Argumentation System (John Lowrance, SRI)

- Extensive work with the intelligence analysis community
- Experimented with automated argument evaluation
- Analysts tend to reject AI that can't be easily understood



Lowrance, J. *et al.* (2008). Template-based Structured Argumentation . In: *Knowledge Cartography: Software Tools and Mapping Techniques.* (Eds.) Okada, A., Buckingham Shum, S. and Sherborne, T. Springer

SEAS: Structured Evidential Argumentation System (John Lowrance, SRI)

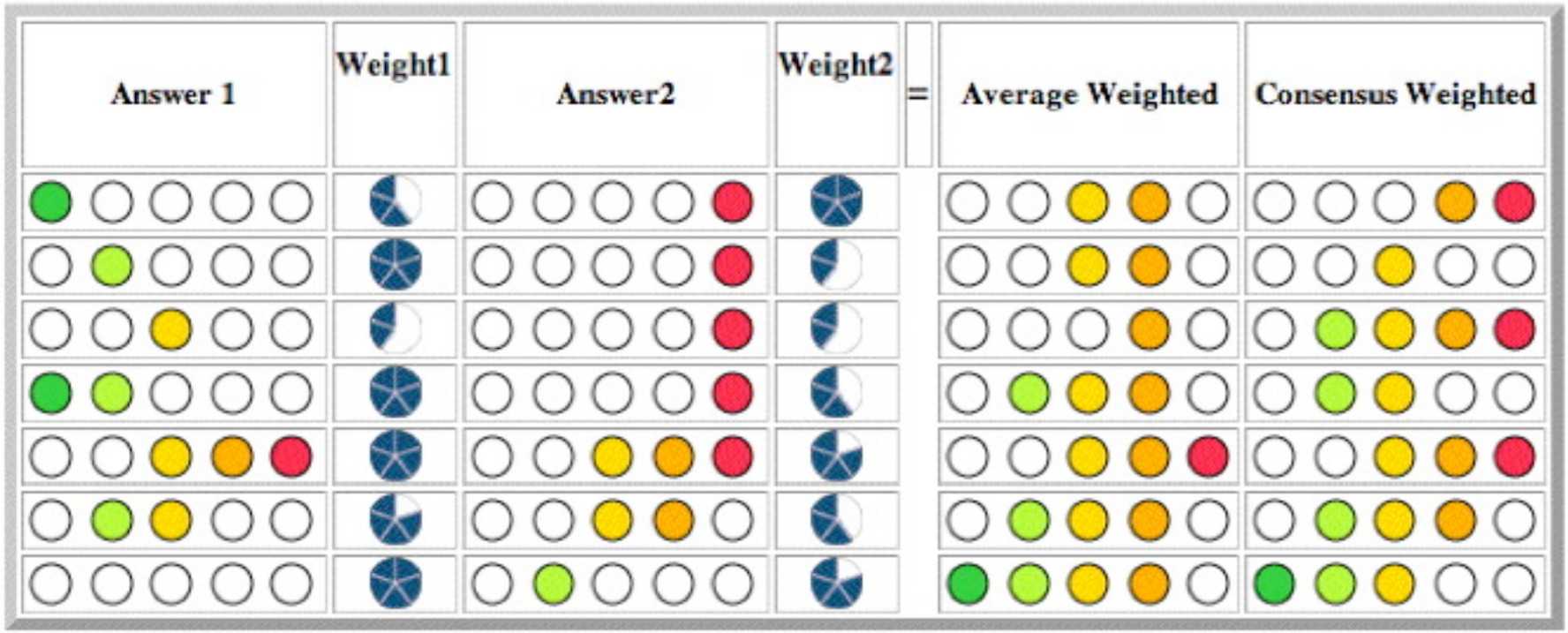


Figure 5: Weighted automated fusion methods

Lowrance, J. *et al.* (2008). Template-based Structured Argumentation . In: *Knowledge Cartography: Software Tools and Mapping Techniques.* (Eds.) Okada, A., Buckingham Shum, S. and Sherborne, T. Springer

SEAS: Structured Evidential Argumentation System (John Lowrance, SRI)

1 GOALS, INTENT, & STRATEGY : Does this terrorist organization intend to carry out a strategic course of action with the goal of harming the U.S. or its interests?

Analyst SEAS Using Fusion Method Minimum (Closest to Green) on 18 May 2007 13:11:00

1.1 GOALS : Does this terrorist organization have goals focused on harming the U.S. or its interests?

Analyst SEAS Using Fusion Method Maximum (Closest to Red) on 15 Nov 2004 10:41:33

1.1.1 LONG-TERM GOALS : Does this terrorist organization have long-term goals focused on harming the U.S. or its interests?

Analyst Lowrance, John D., SRI International on 6 Jan 2006 16:15:34

Question Amplification
- Eradicate U.S. presence from some part of the world
- Overthrow pro-Western governments
- Establish anti-US movement

Rationale The most recent evidence suggest that Abu Sayyaf is evolving into a terrorist group with deeper Islamic roots and more connections to other Islamic terrorist groups. This likely indicates an alignment of Abu Sayyaf's goals with these other groups' goals, which do intend to harm the U.S. or its interests.

▶History (1)

Evidence

Analyst: Lowrance, John D., SRI International on 31 Aug 2004 16:00:38
TIME Asia Magazine: The Return of Abu Sayyaf -- Aug. 30, 2004: Abu Sayyaf has evolved into a much more ferocious band. A new leadership has abandoned the kidnapping that brought in millions of dollars in ransom. Now, the group is returning to its Islamic roots and is using the familiar weapons of terror—bombing and assassination—in an attempt to achieve an independent Muslim republic in the southern Philippines.

Analyst: Lowrance, John D., SRI International on 31 Aug 2004 15:59:08
Naval Postgraduate School: Terrorist Group Profiles, Abu Sayyaf, 2003: Although from time to time it claims that its motivation is to promote an independent Islamic state in western Mindanao and the Sulu Archipelago—areas in the southern Philippines heavily populated by Muslims—the ASG has primarily used terror for financial profit.

Exhibits **Sayyaf May Become International Terror Group-- newsflash.org-- STAR-- by Marvin Sy, Manila, July 21, 2004**

Figure 10: Summary depiction of a portion of an argument

Lowrance, J. *et al.* (2008). Template-based Structured Argumentation . In: *Knowledge Cartography: Software Tools and Mapping Techniques.* (Eds.) Okada, A., Buckingham Shum, S. and Sherborne, T. Springer

Compendium

“it’s like Excel, but for knowledge”

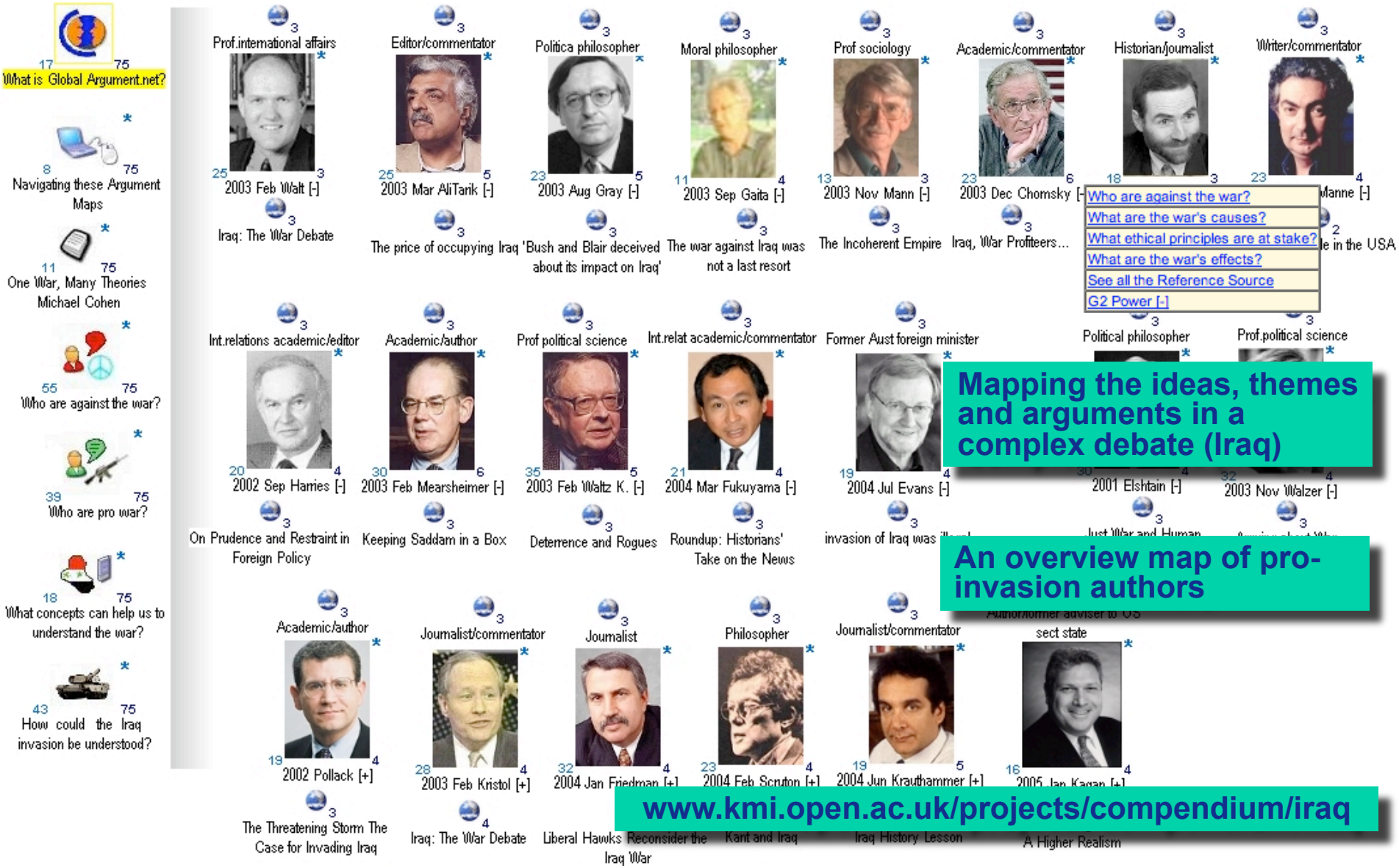
http://compendium.open.ac.uk/institute

NASA e-science field trials

Simulated distributed Mars-Earth planning and data analysis tools for Mars Habitat field trial in Utah desert, supported from US+UK

www.kmi.open.ac.uk/projects/coakting/nasa

Issue/concept mapping

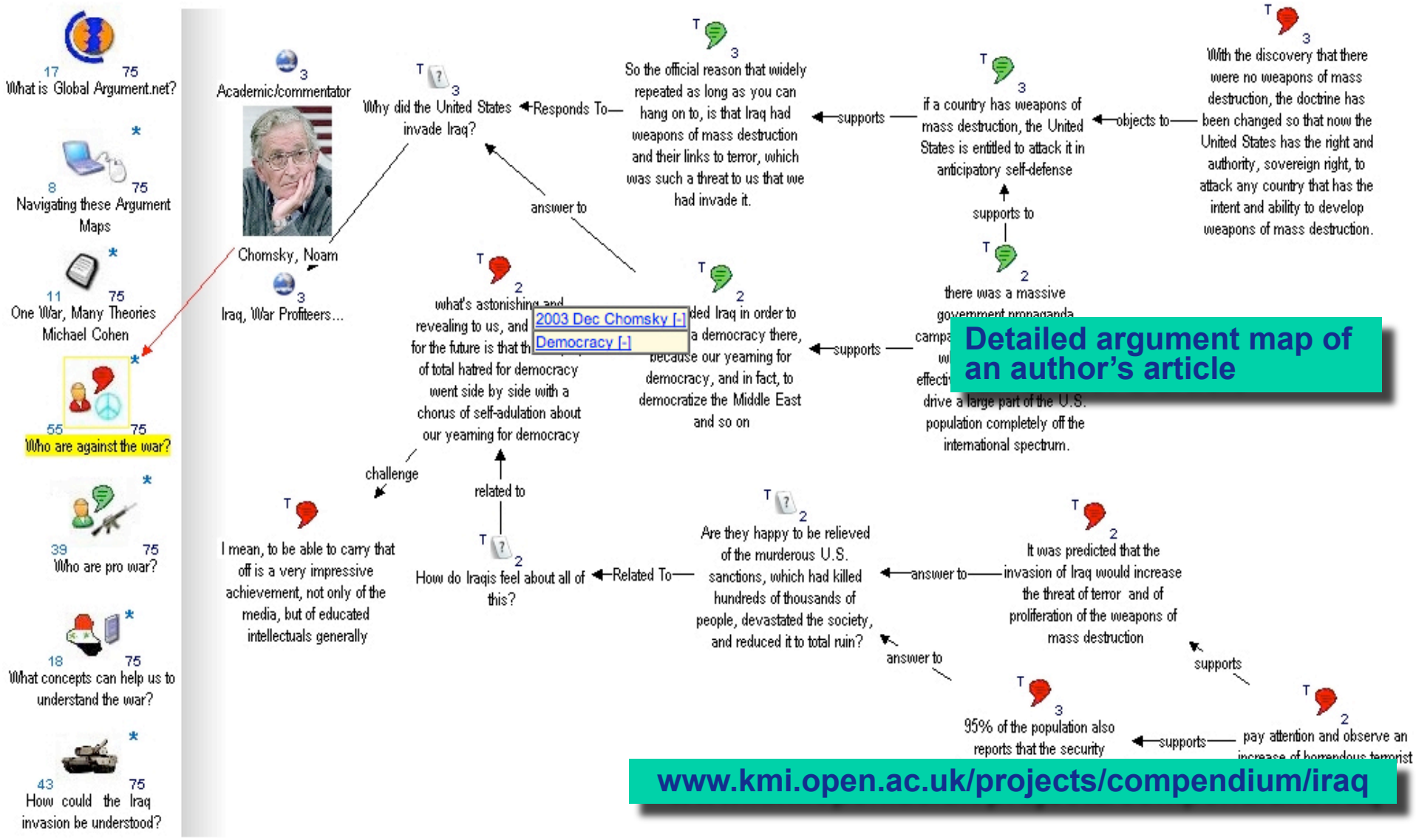


Mapping the ideas, themes and arguments in a complex debate (Iraq)

An overview map of pro-invasion authors

www.kmi.open.ac.uk/projects/compendium/iraq

Issue/concept mapping



Detailed argument map of an author's article

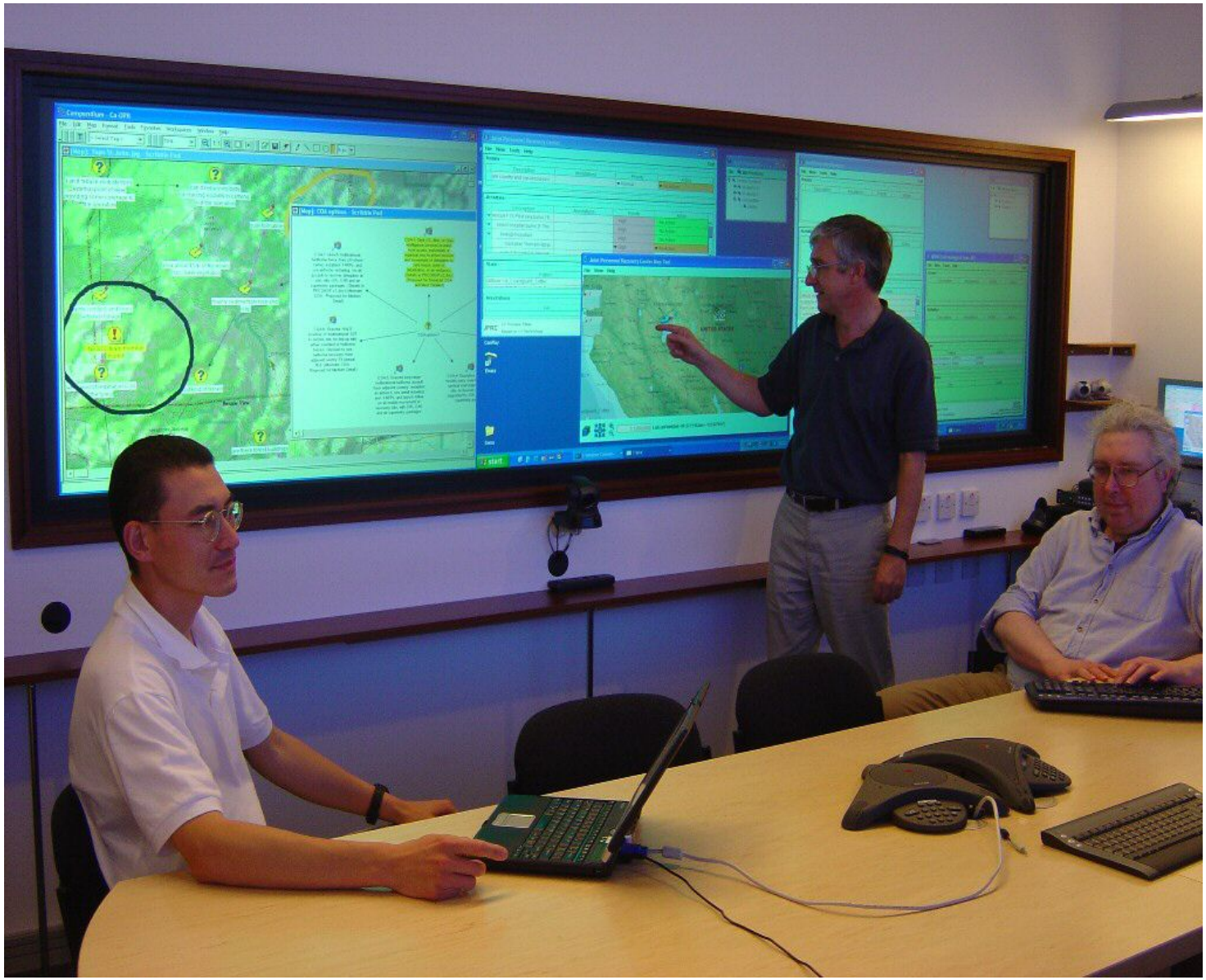
www.kmi.open.ac.uk/projects/compendium/iraq

Using Compendium for personnel recovery planning

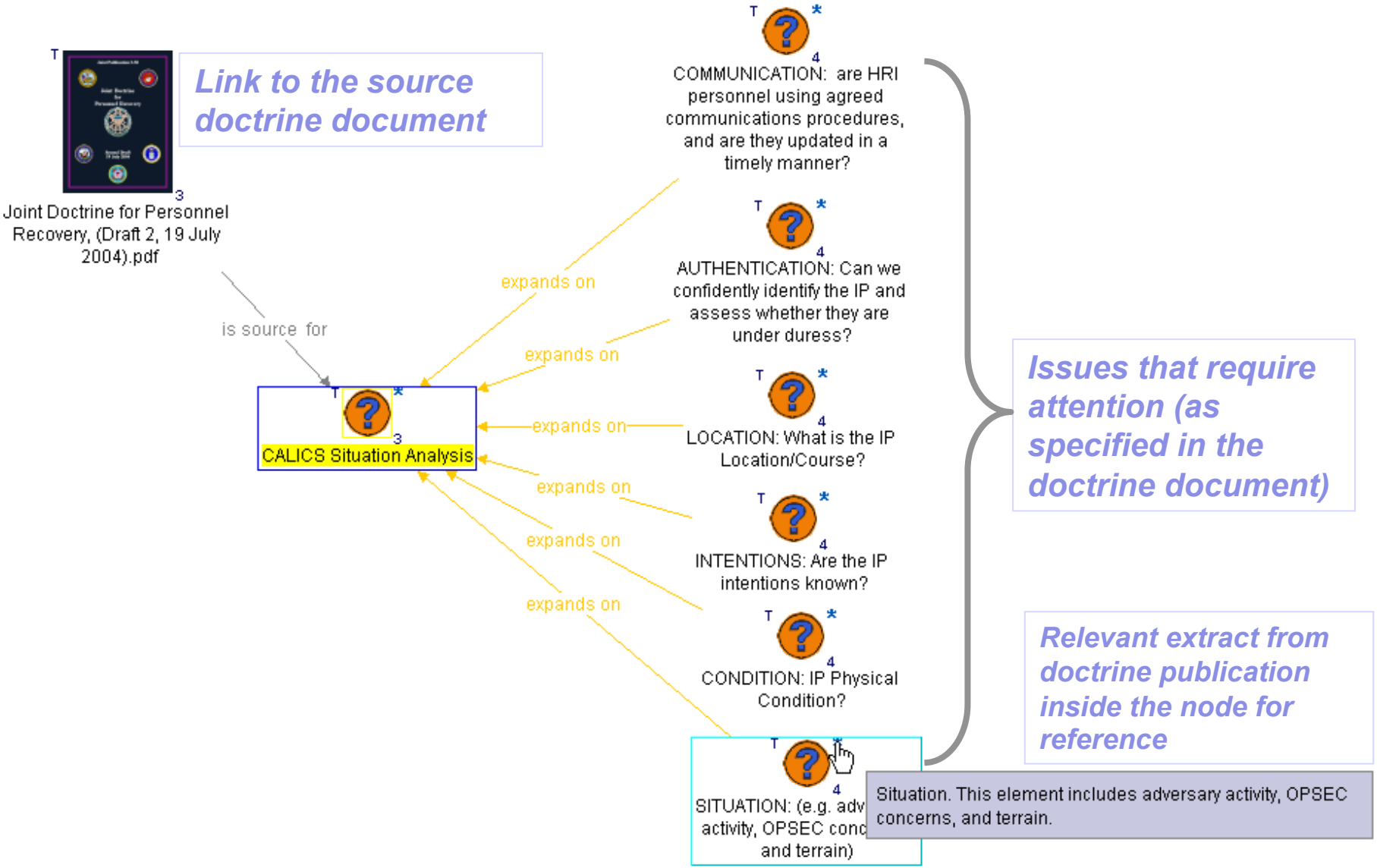
Example of Conversational Modelling:
real time dialogue mapping combined with model driven templates (AI+IA)

Co-OPR Project (with Austin Tate): http://www.aiai.ed.ac.uk/project/co-opr

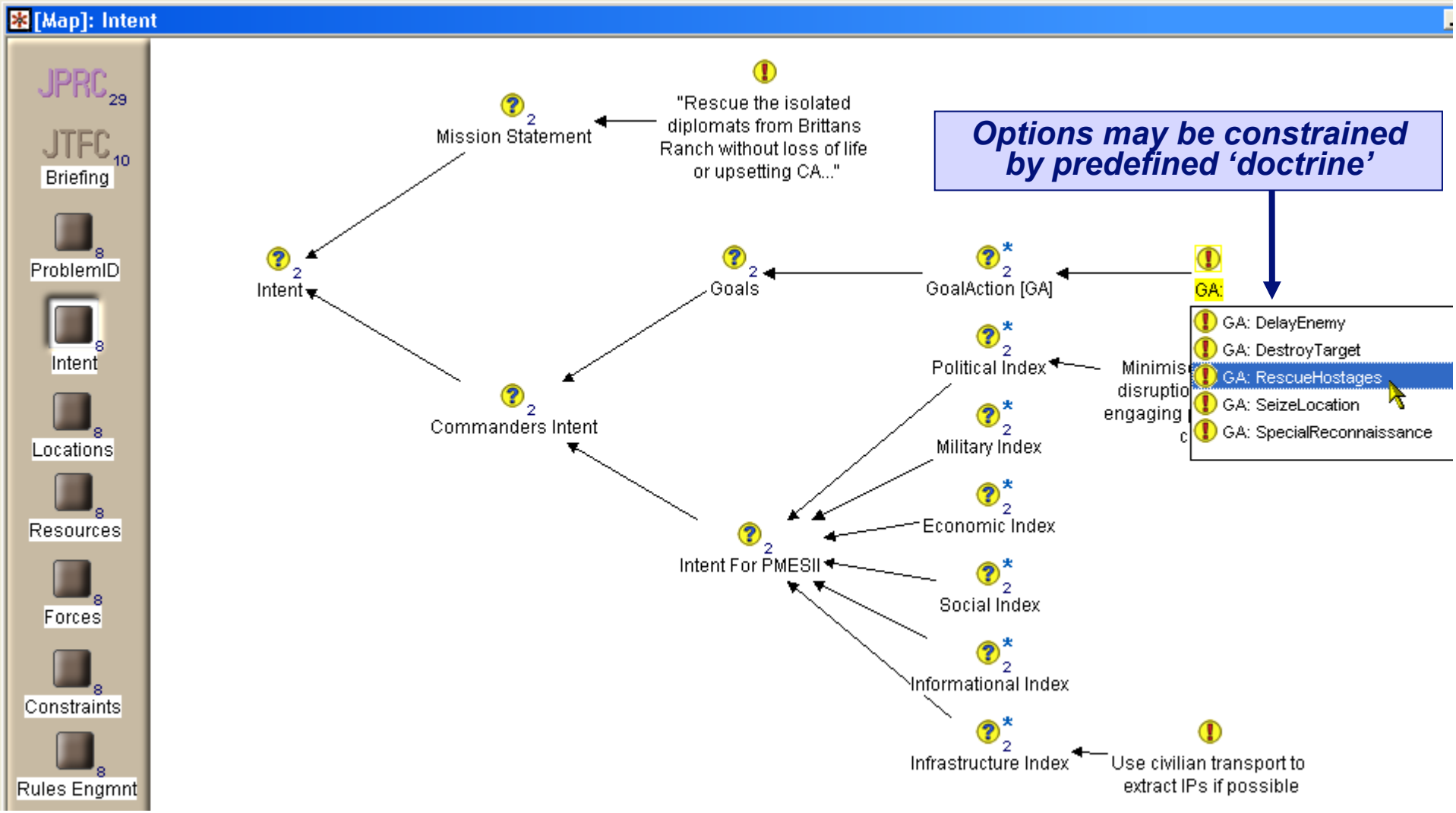
Personnel Recovery: Planning Cell



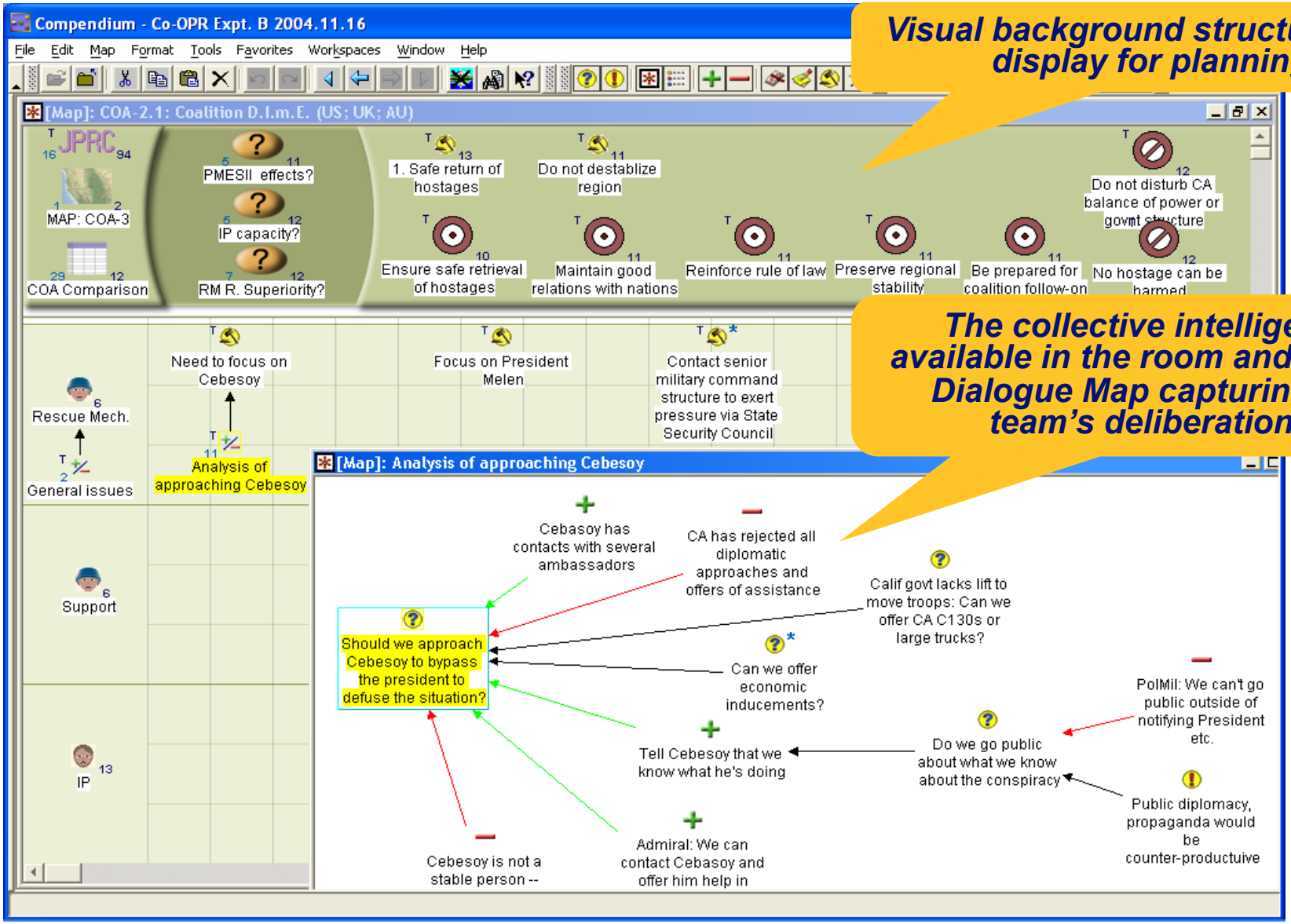
Doctrine for Situation Analysis extracted as an Issue Template



Mission Briefing: *Intent* template



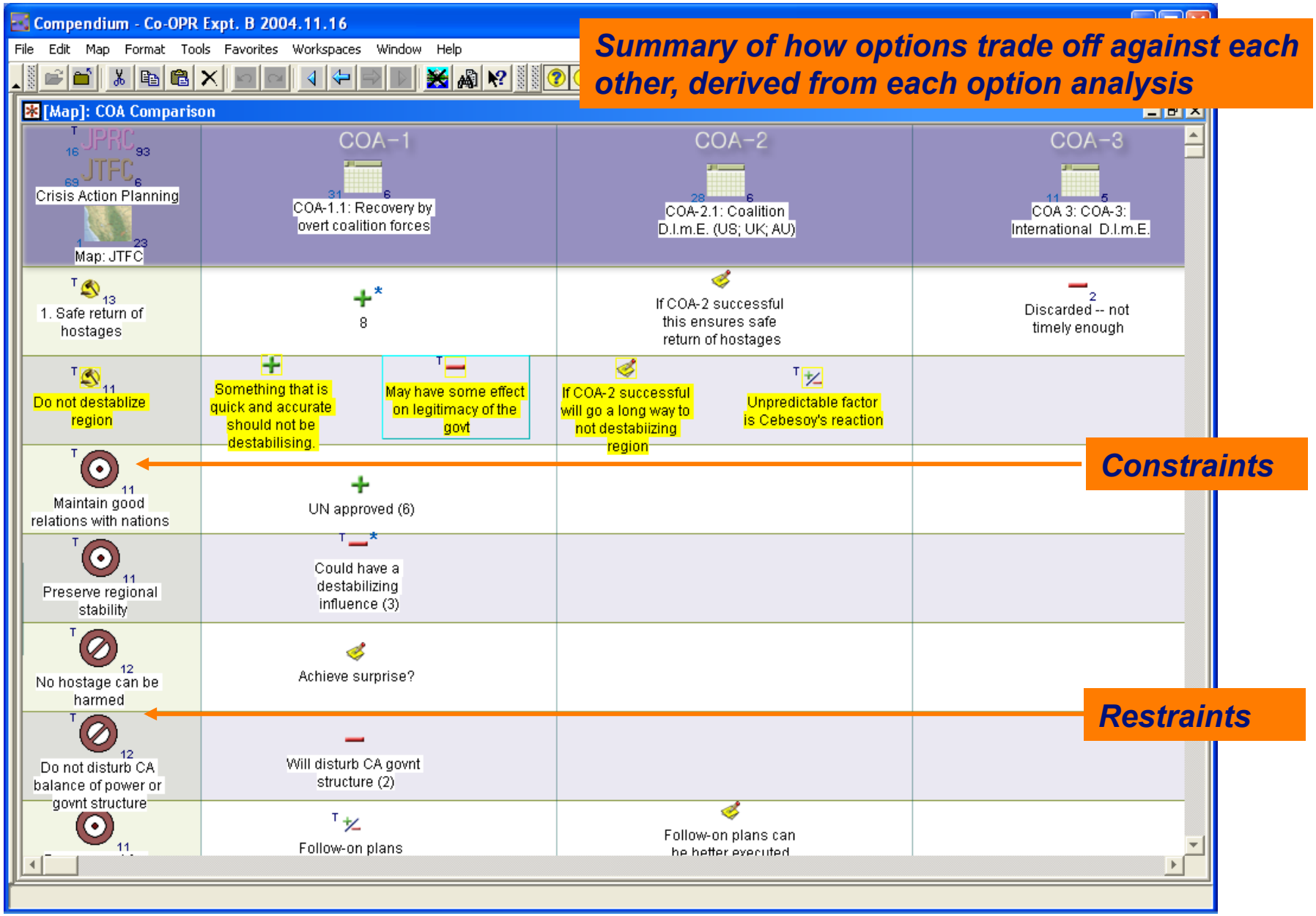
Capturing political deliberation/rationale



Visual background structures the display for planning

The collective intelligence available in the room and online: Dialogue Map capturing the team's deliberations

Option Comparison matrix

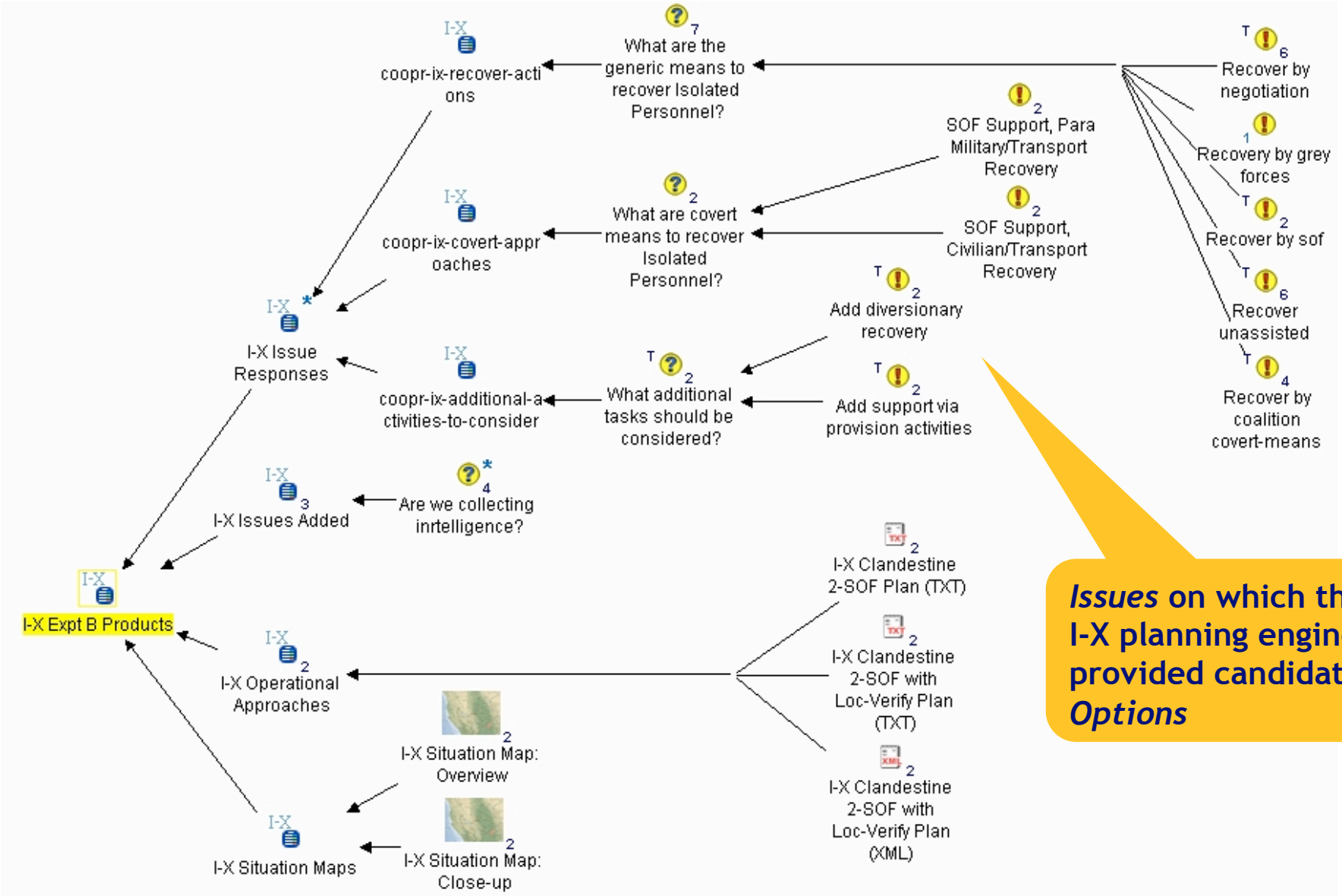


Summary of how options trade off against each other, derived from each option analysis

Constraints

Restraints

I-X Planning Engine input to Compendium



Issues **on which the I-X planning engine provided candidate** ***Options***

Compendium has played a number of roles in supporting collective sensemaking

Decision/Design Rationale

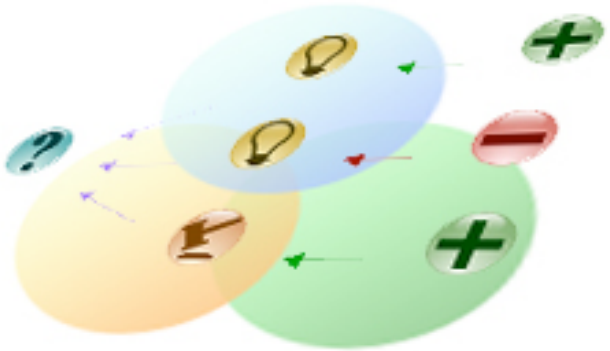
Knowledge Management

Storyboarding

Meeting Capture & Replay

Domain Modelling

Presentations



Requirements Construction

Data Analysis

Specification

Documentation

Project Reviews

Argument Mapping

Using argumentation theory to probe reasoning in more detail

Argument Mapping 101

AUSTHINK
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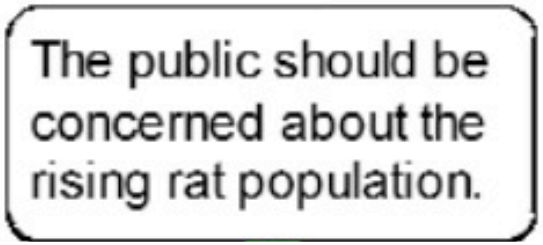
Neil Thomason & Yanna Rider (2008). Cognitive and Pedagogical Benefits of Argument Mapping: L.A.M.P. Guides the Way to Better Thinking. In: *Knowledge Cartography: Software Tools and Mapping Techniques.* (Eds.) Okada, A., Buckingham Shum, S. and Sherborne, T. Springer



Argument Mapping 101

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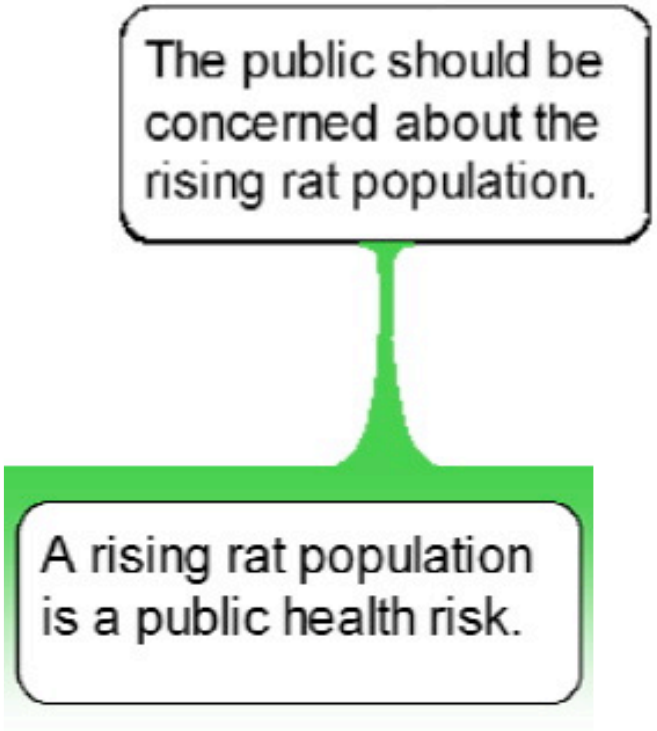

Argument Mapping 101

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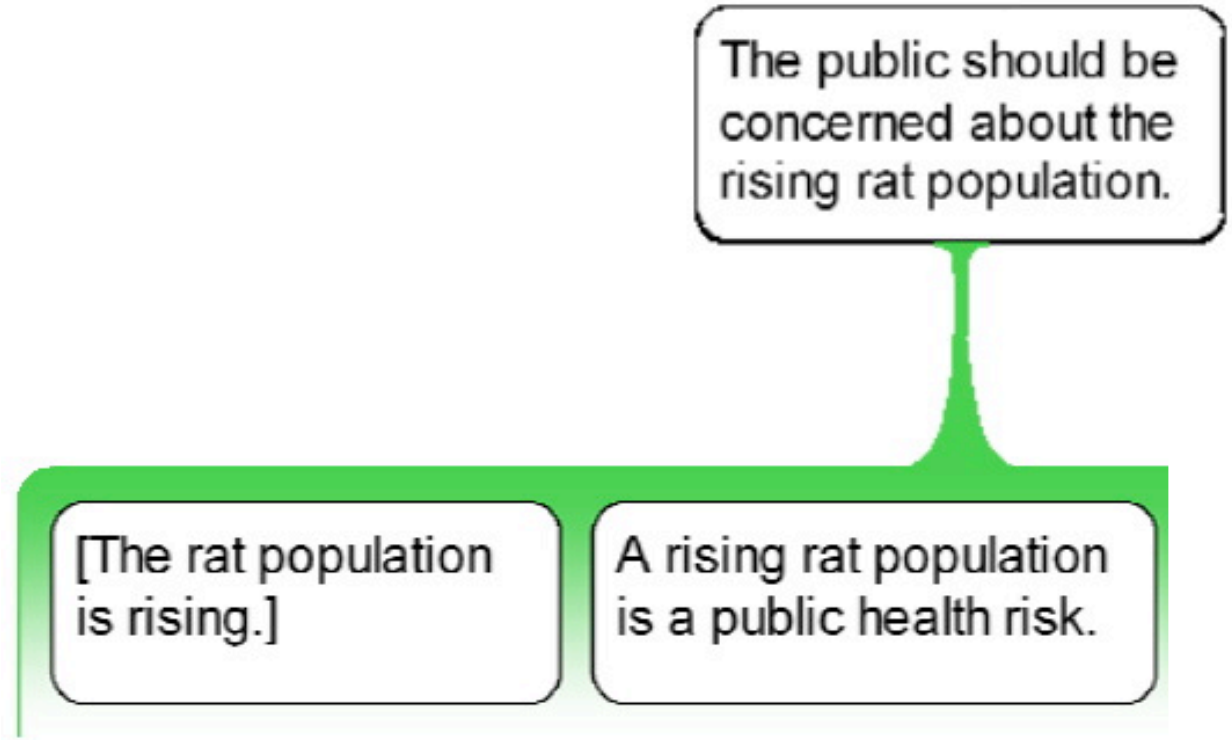

Argument Mapping 101

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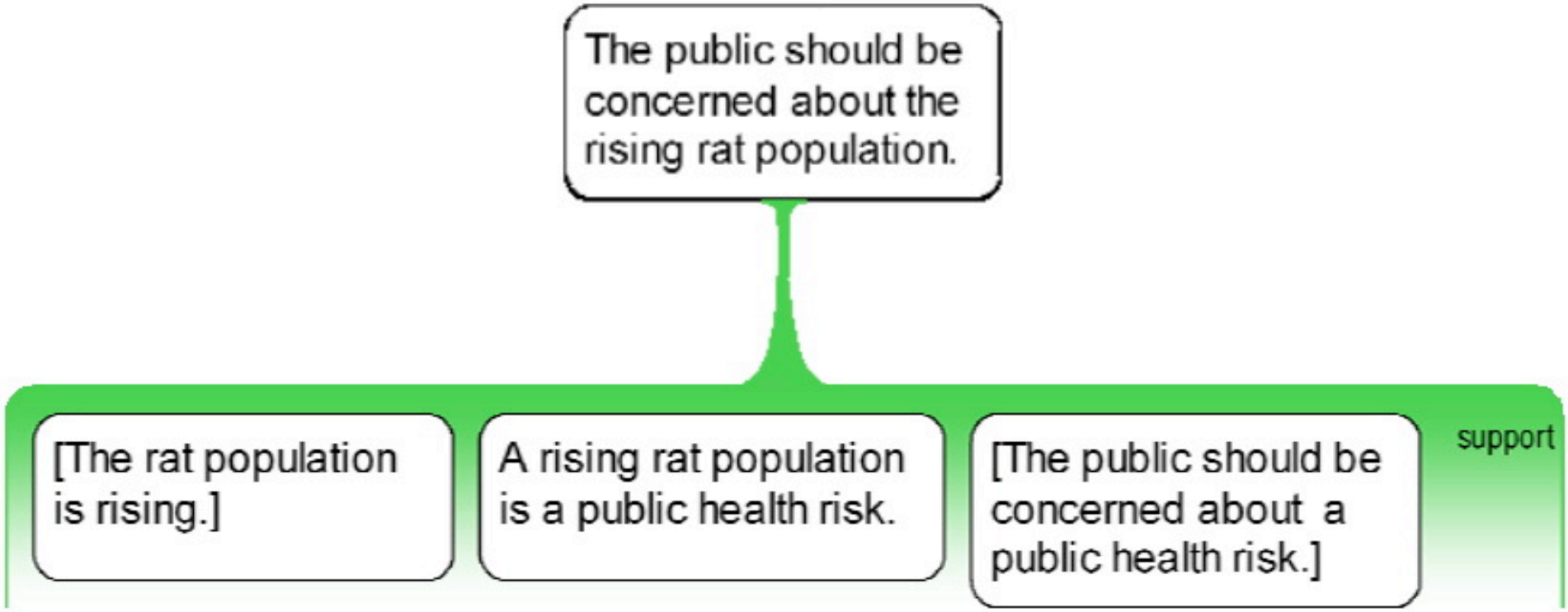

Argument Mapping 101

Why Tanks? Why Abrams? The Application of Argument Mapping to a Contentious Public Policy Debate.
A report prepared for the Australian Army, reviewing the arguments bearing upon the controversial decision to purchase the Abrams battle tank. An "industrial strength" application of argument mapping.

http://austhinkconsulting.com/resources/

The conventions of argument mapping—utilizing space, line and colour—are designed to be intuitively easy for the visual brain to follow and to relieve it of the considerable burden of having to extract the reasoning going on in a piece of prose and think about the soundness of that reasoning at the same time.

How to read an argument map

An argument map consists of a set of claims (contentions or premises), hierarchically organized to display their logical relationships. Those relationships follow a simple rule: claims are supported or opposed by the reasons or objections immediately below them. Such support or opposition is specified by the coloured lines connecting the claims.

Figure 1. The Method: Conventions of Argument Mapping

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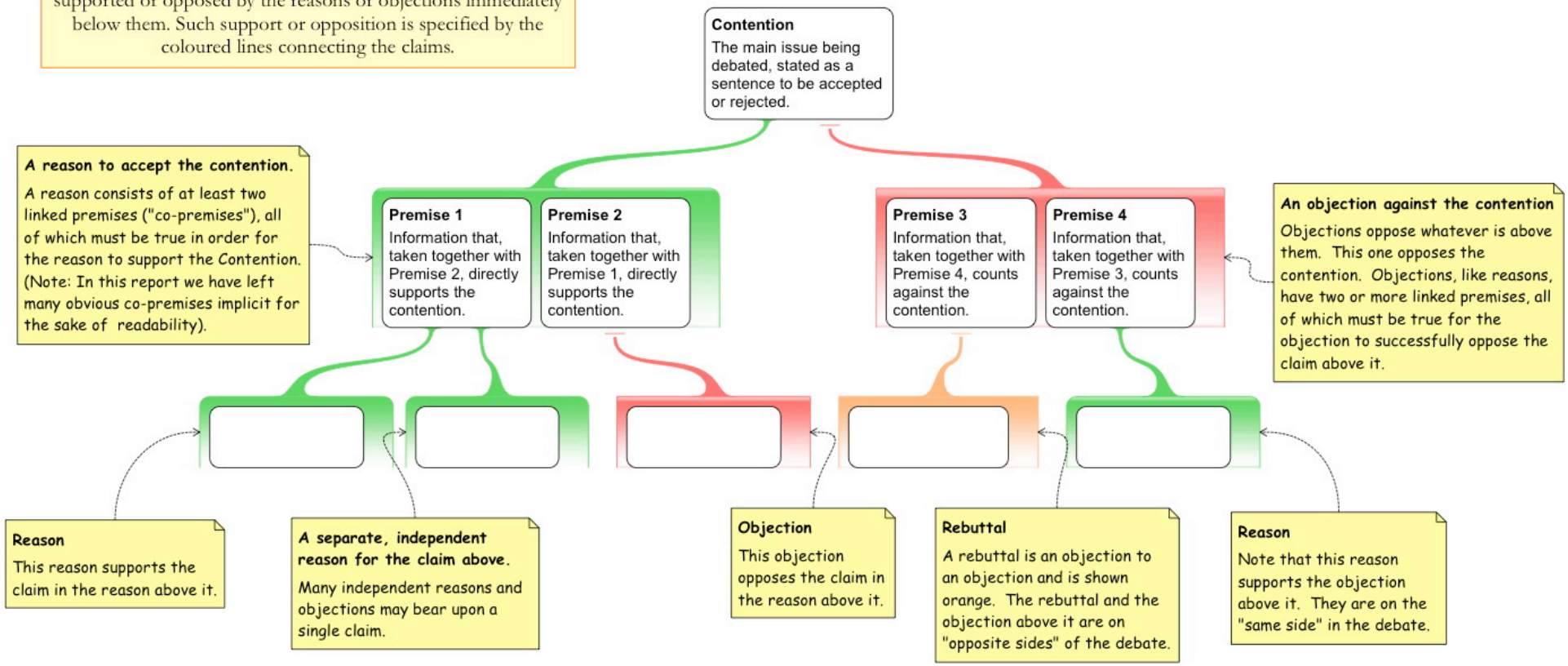

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Contention
The main issue being debated, stated as a sentence to be accepted or rejected.

A reason to accept the contention.
A reason consists of at least two linked premises ("co-premises"), all of which must be true in order for the reason to support the Contention. (Note: In this report we have left many obvious co-premises implicit for the sake of readability).

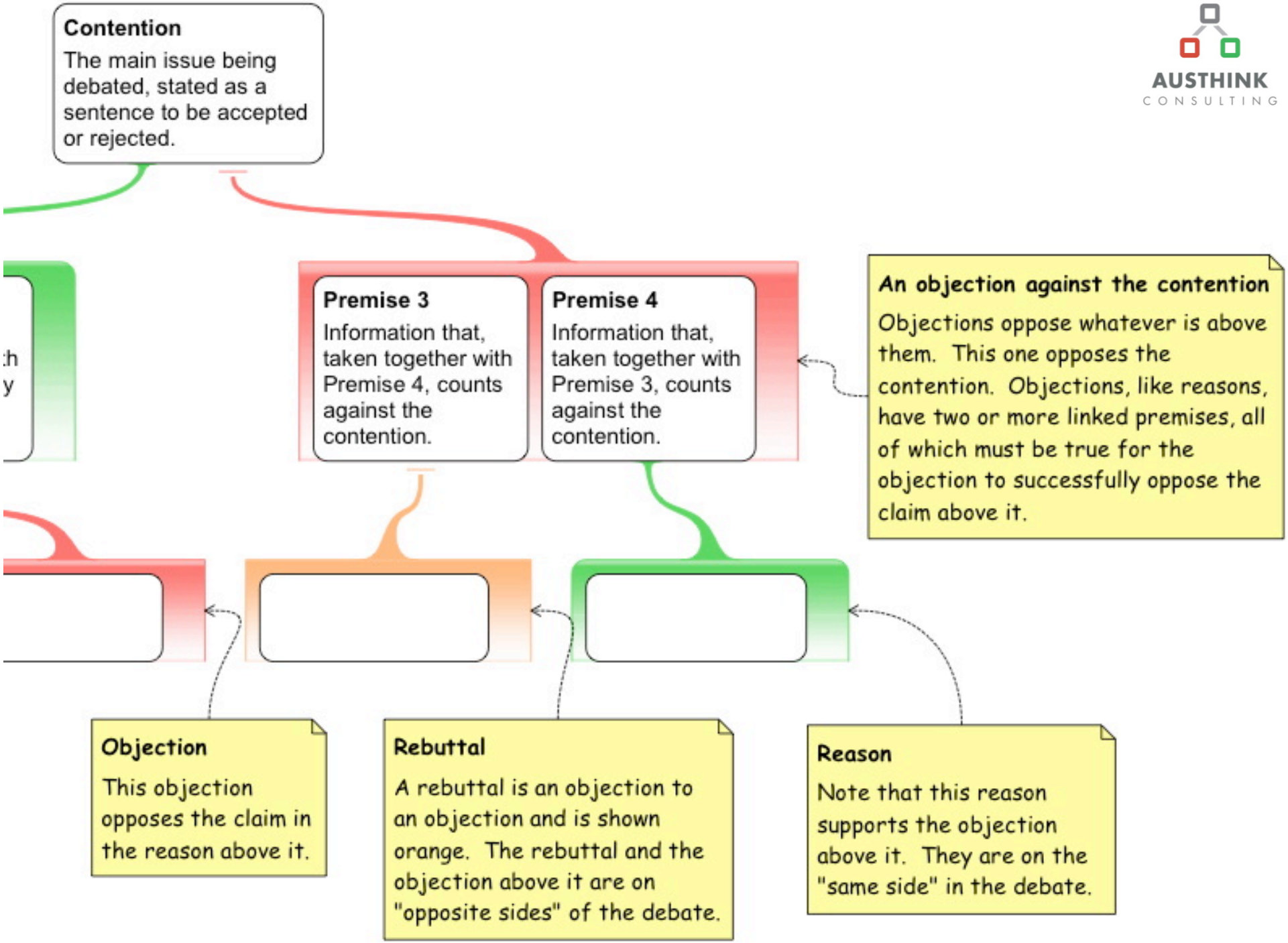
Premise 1
Information that, taken together with Premise 2, directly supports the contention.

Premise 2
Information that, taken together with Premise 1, directly supports the contention.

Reason
This reason supports the claim in the reason above it.

A separate, independent reason for the claim above.
Many independent reasons and objections may bear upon a single claim.

Objection
This objection opposes the claim in the reason above it.



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Large Scale Argument Mapping

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WHY TANKS? WHY ABRAMS?

The application of argument mapping to a contentious public policy debate

FINDINGS, SELECTED MAPS AND OBSERVATIONS

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Large Scale Argument Mapping

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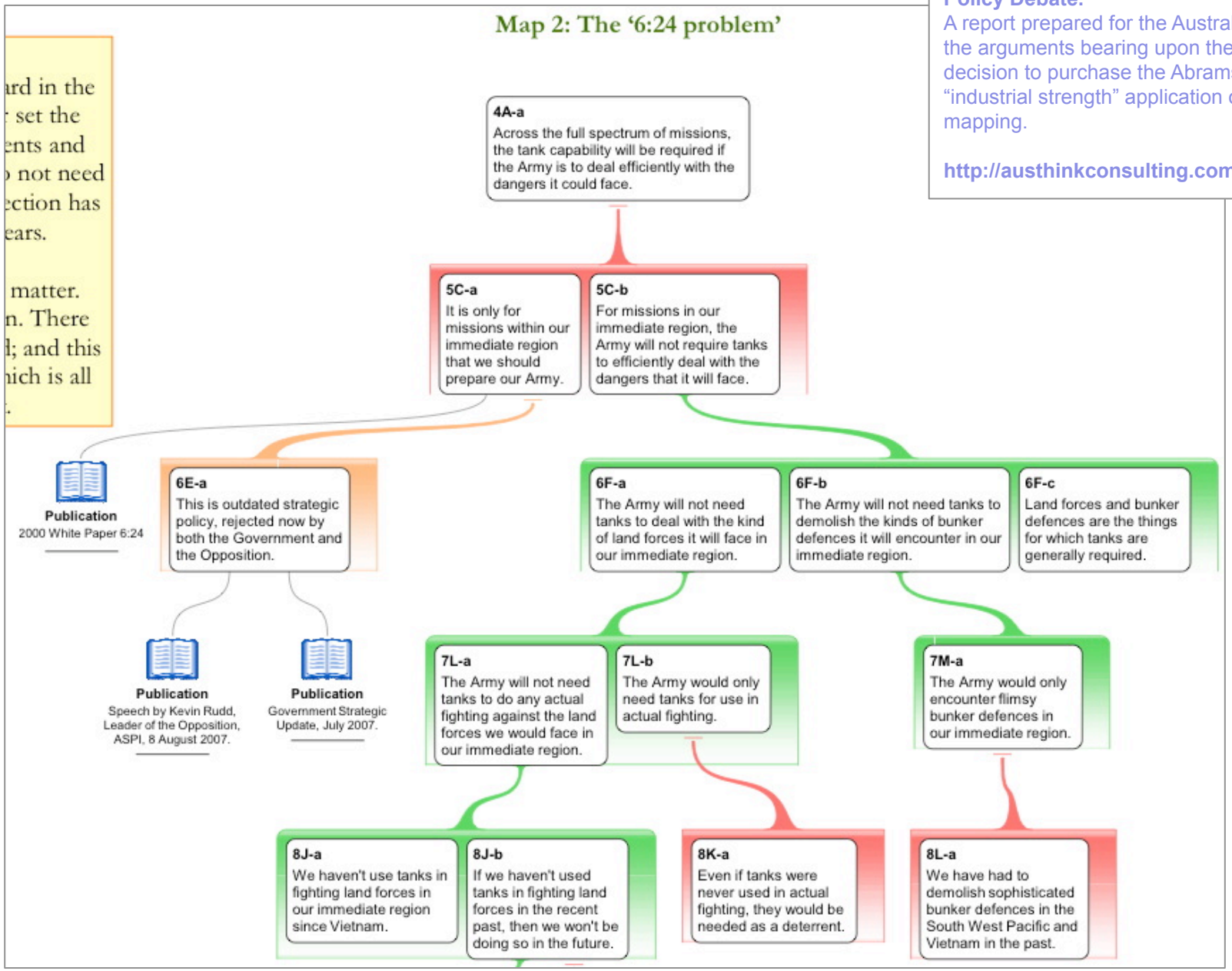

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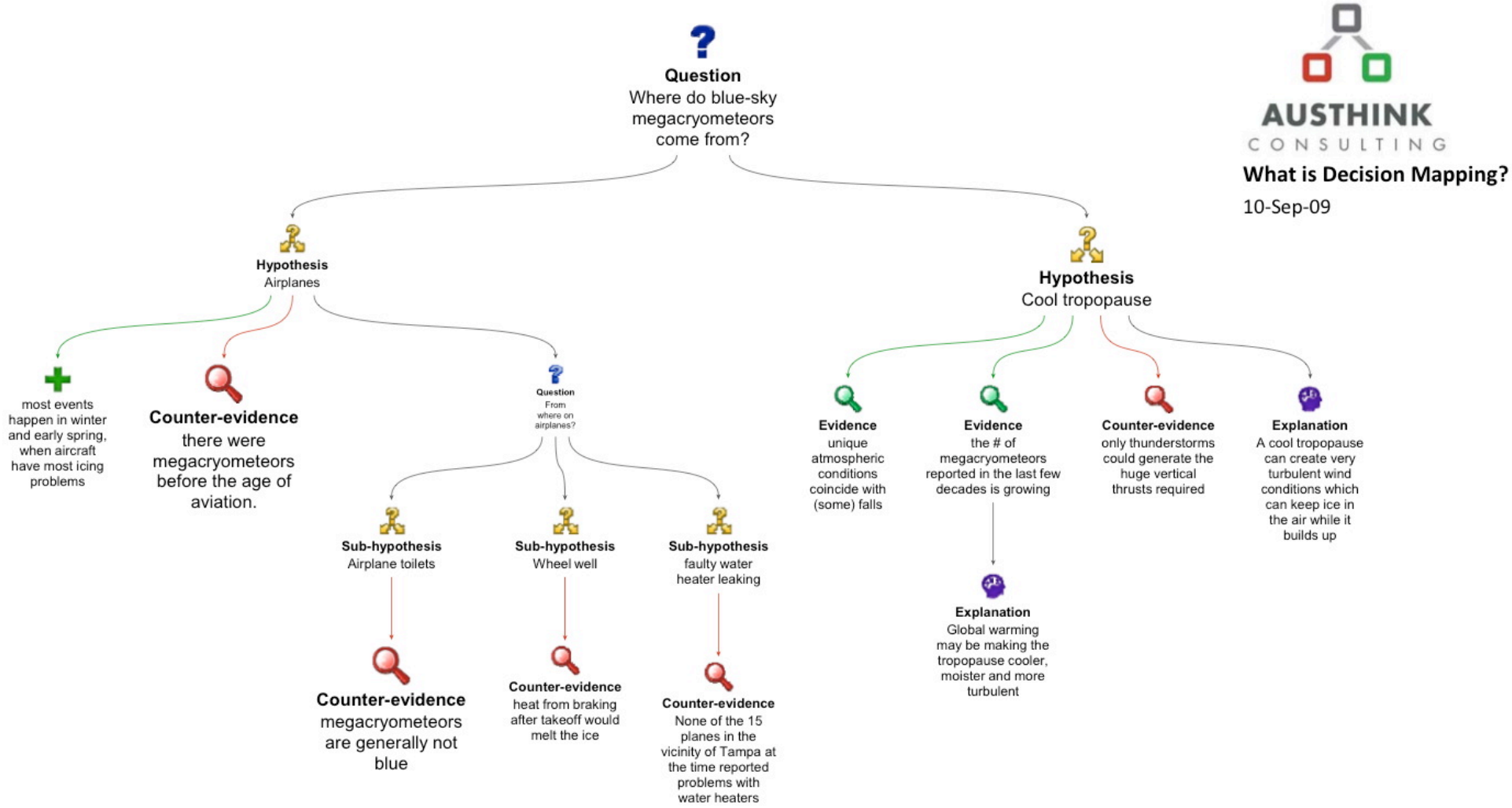
Hypothesis Mapping (Tim van Gelder, Austhink Consulting)

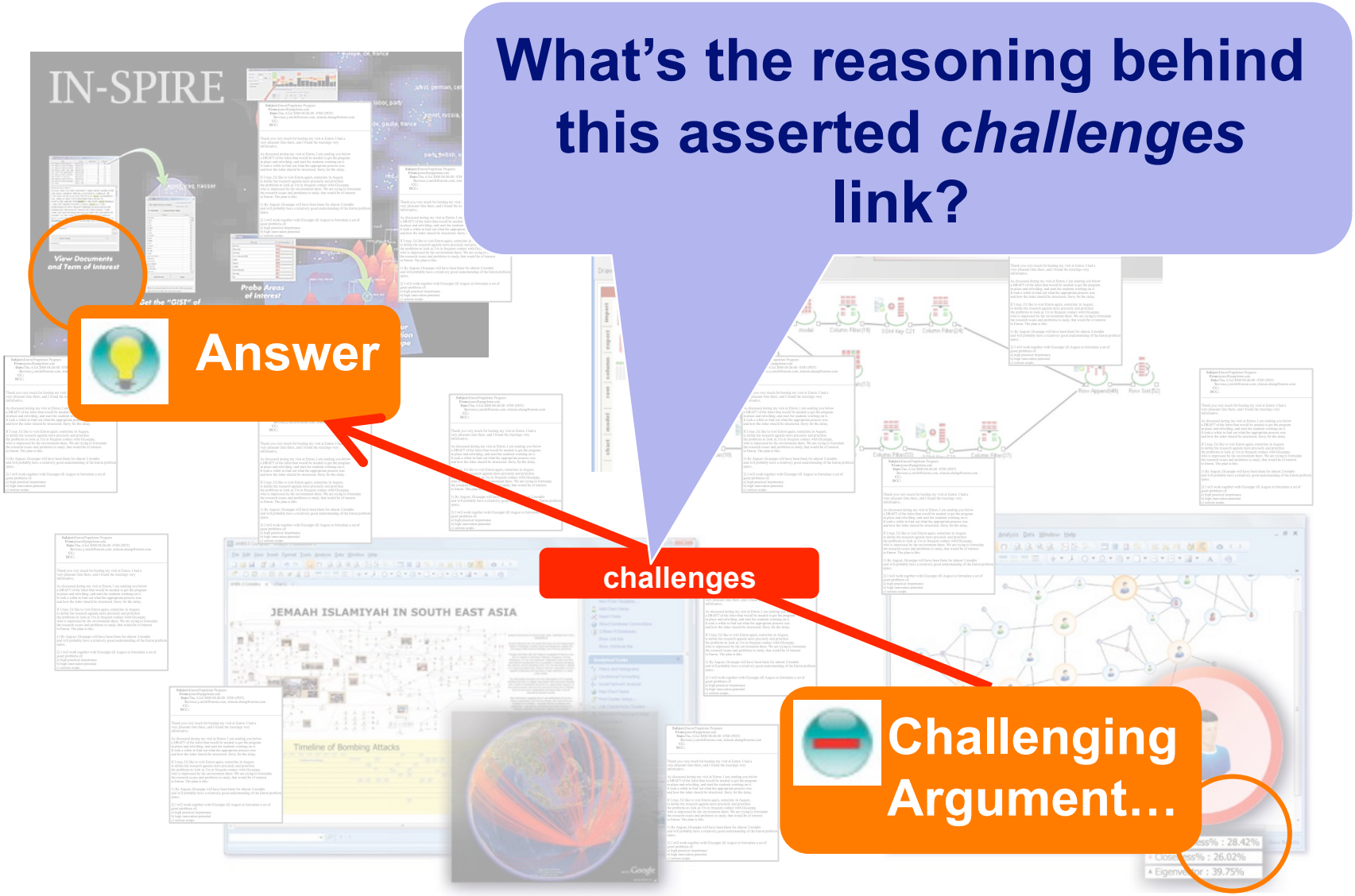
A megacryometeor is a giant hailstone; A blue-sky megacryometeor is one that falls out of a clear blue sky.
Map based on: Douglas, E. (2007). Mystery of the monster hailstones. *New Scientist,* 23 Dec. 2007.



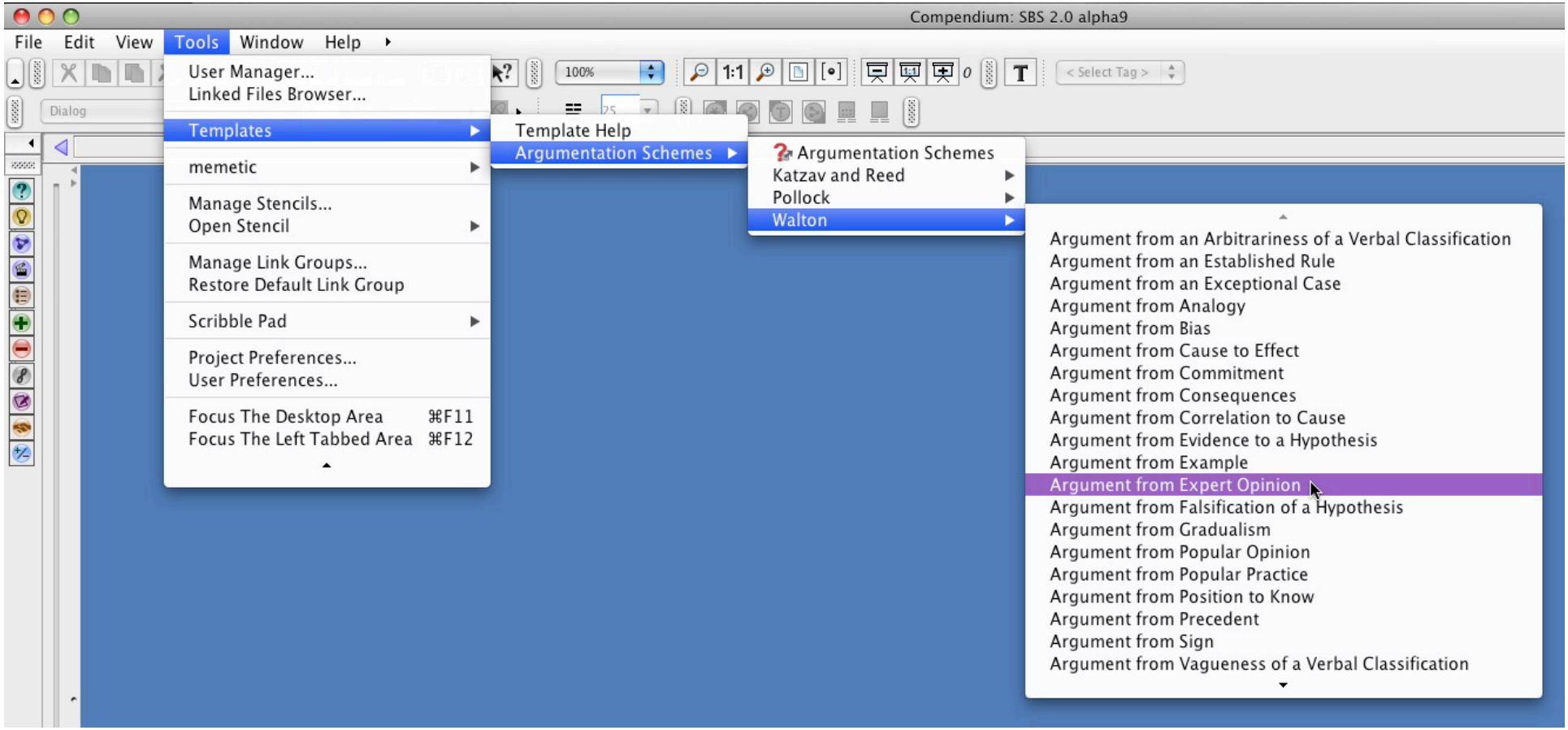
Argumentation Schemes

Using argumentation theory to probe reasoning in more detail

Recall this…

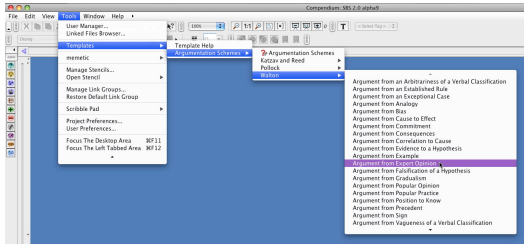

What's the reasoning behind this asserted *challenges* link?
IN-SPIRE
View Documents and Term of Interest
Probe Areas of Interest
Answer
challenges
JEMAAH ISLAMIYAH IN SOUTH EAST ASIA
Timeline of Bombing Attacks
Challenging Argument…

Compendium Libraries of IBIS templates with critical questions to probe different kinds of argument scheme

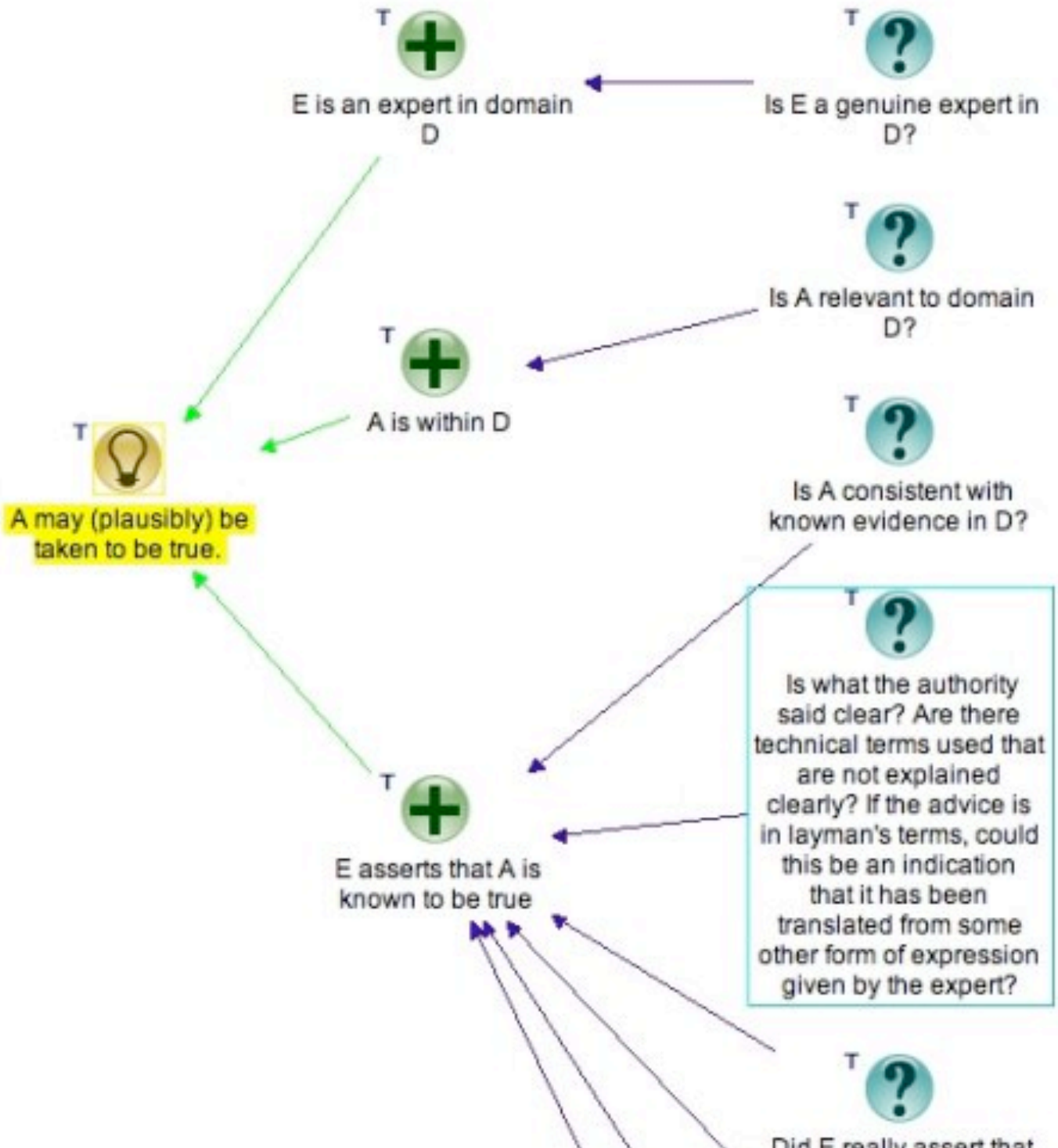


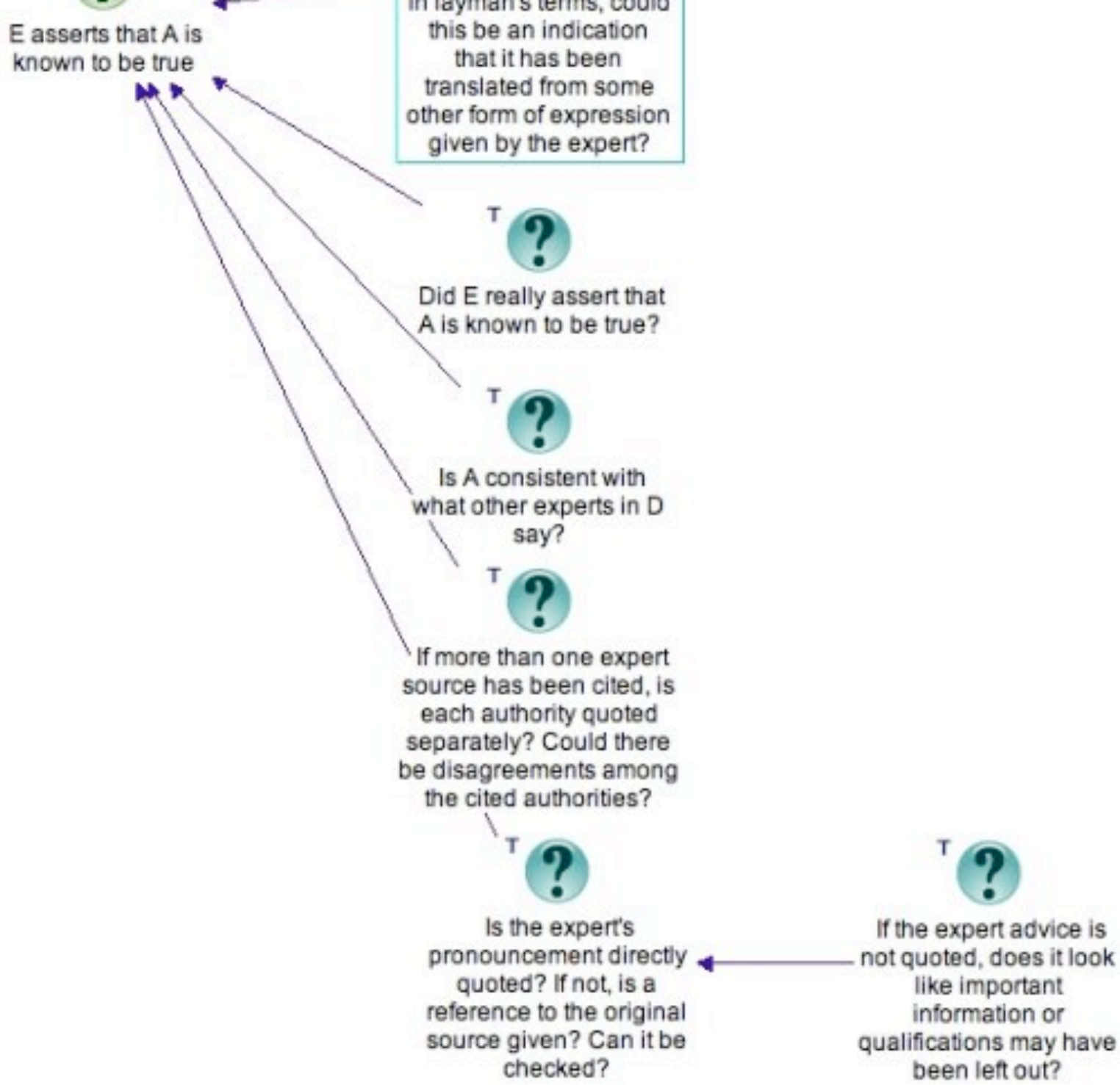
Argument Interchange: These XML files were transformed from another format, generated from Chris Reed & Doug Walton's work on modelling Walton's argumentation schemes

Compendium Libraries of IBIS templates with critical questions to probe different kinds of argument scheme



Argument from an Arbitrariness of a Verbal Classification
Argument from an Established Rule
Argument from an Exceptional Case
Argument from Analogy
Argument from Bias
Argument from Cause to Effect
Argument from Commitment
Argument from Consequences
Argument from Correlation to Cause
Argument from Evidence to a Hypothesis
Argument from Example
Argument from Expert Opinion
Argument from Falsification of a Hypothesis
Argument from Gradualism
Argument from Popular Opinion
Argument from Popular Practice
Argument from Position to Know
Argument from Precedent
Argument from Sign
Argument from Vagueness of a Verbal Classification


T
E is an expert in domain D
T
Is E a genuine expert in D?
T
Is A relevant to domain D?
T
A is within D
T
A may (plausibly) be taken to be true.
T
Is A consistent with known evidence in D?
T
Is what the authority said clear? Are there technical terms used that are not explained clearly? If the advice is in layman's terms, could this be an indication that it has been translated from some other form of expression given by the expert?
T
E asserts that A is known to be true
T
Did E really assert that


E asserts that A is known to be true
In layman's terms, could this be an indication that it has been translated from some other form of expression given by the expert?
T
Did E really assert that A is known to be true?
T
Is A consistent with what other experts in D say?
T
If more than one expert source has been cited, is each authority quoted separately? Could there be disagreements among the cited authorities?
T
Is the expert's pronouncement directly quoted? If not, is a reference to the original source given? Can it be checked?
T
If the expert advice is not quoted, does it look like important information or qualifications may have been left out?

enter the

social-semantic web…

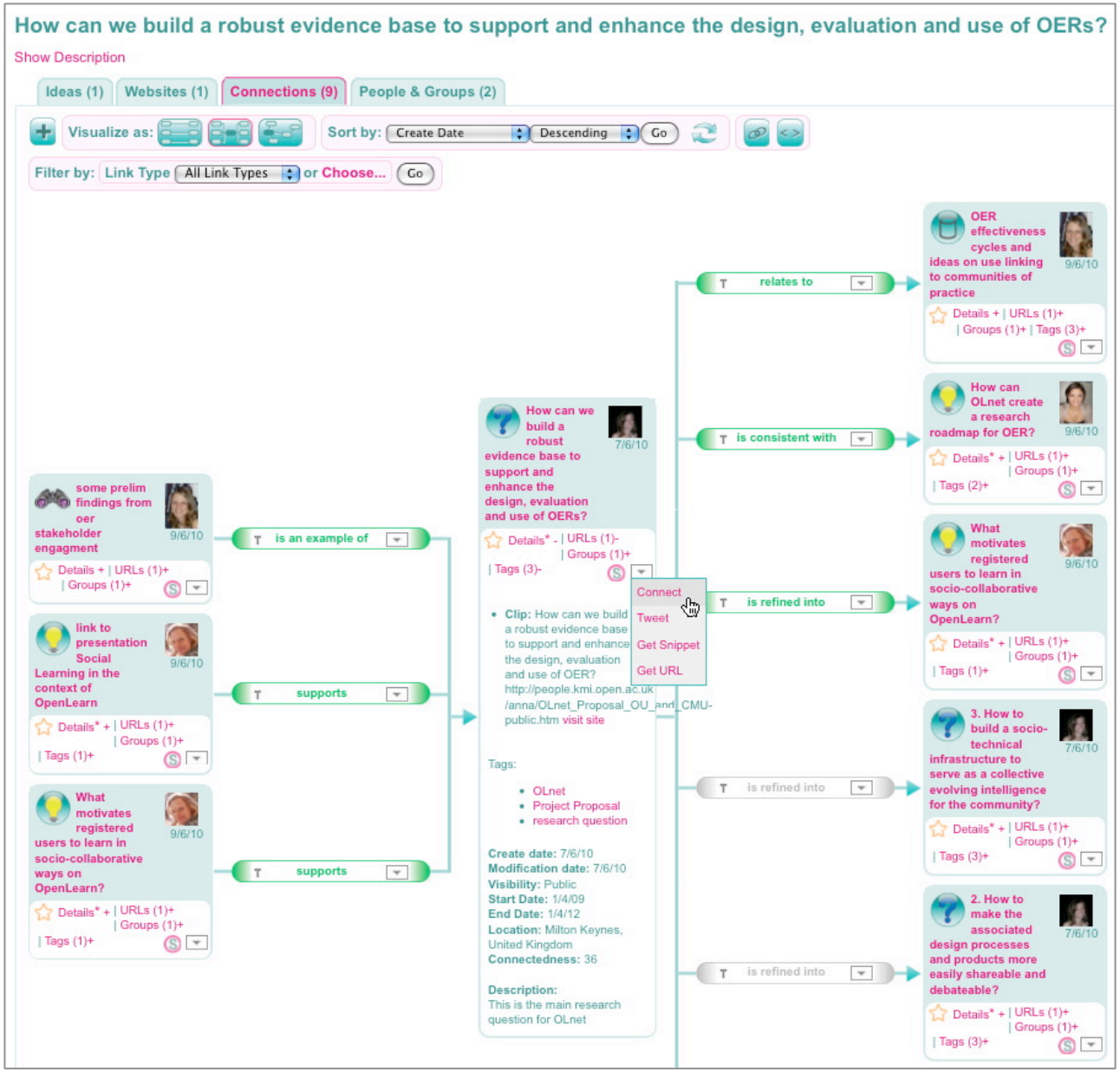
cohere

web annotation for sensemaking

(A winner in the Mozilla/MacArthur Foundation
Jetpack for Learning Design Challenge)

http://cohere.open.ac.uk

cohere — Web 2.0 IBIS++ structured deliberation



cohere — annotating documents with Firefox plugin

De Liddo, A. and Buckingham Shum, S. (2010). Cohere: A prototype for contested collective intelligence. In: *ACM Computer Supported Cooperative Work (CSCW 2010) - Workshop: Collective Intelligence In Organizations*, February 6-10, 2010, Savannah, Georgia, USA. http://oro.open.ac.uk/19554

cohere — geospatial mashup of ideas

Nodes in the semantic network containing geolocation data can be visualized in Google Maps

Cohere >>> make the connection - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://cohere.open.ac.uk/tagsea

Most Visited | cohereweb.net | Global Sensemaking | e-Dance Pr | creenStrea... | Memetic Meeting Man... | OntologWiki: Confere...

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kingham Shum | Sign Out | Blog | About | Help | Admin

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Learning Design OER policy
OLnet Online learning
organizational studies politics
regional planning
rural development
Screen Capturing
social dynamics society software
spatial planning sustainability
Sustainable Development
sustainable future test
timestamp-demo
UK Election TV Debates
urban plannig

Install Cohere FireFox plugin

Search results for tags "geolocation-demo"

Ideas (3) | Websites (0) | Connections (1) | People & Groups (1)

Visualize as:

Map | Satellite | Hybrid

DEMO: A piece of Data with TIMEPERIOD 1 Jan 2010 - 12 May 2010, and LOCATION Johannesburg

Canada, United States, México, Brasil, Venezuela, Colombia, Perú, Bolivia, Chile, Argentina, South Pacific Ocean, South Atlantic Ocean, Iceland, Sverige, Sweden, Norge, Norway, Polska, Poland, Deutschland, Germany, France, España, Spain, Italia, Italy, Türkiye, Україна, Ukraine, Россия, Russia, Kazakhstan, Mongolia, DR Congo, Angola, Namibia, Botswana, South Africa, Madagascar, Indian Ocean, Indonesia, Papua New Guinea, Australia, New Zealand

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http://cohere.open.ac.uk/node.php?nodeid=137108241720458919001274346337

cohere — timeline viz. mashup of ideas

Nodes in the semantic network containing temporal data can be visualized in MIT Simile's timeline

Cohere >>> make the connection - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://cohere.open.ac.uk/

Most Visited | cohereweb.net | Global Sensemaking | Memetic Meeting Man... | OntologWiki: Confere...

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cohere >>> make the connection

Buckingham Shum | Sign Out | Blog | About | Help | Admin

Search Go

My Items All Tags Only

Home
My Data
Add:
Manage:
My groups:

climate change communities
community action
community studies conference
eParticipation geography
geolocation-demo
Internazionalization journal
Learning Design OER policy
OLnet Online learning
organizational studies politics
regional planning
rural development
Screen Capturing
social dynamics society software
spatial planning sustainability
Sustainable Development
sustainable future test
timestamp-demo
UK Election TV Debates
urban plannig

Install Cohere FireFox plugin

DEMO: A Question with a TIME-PERIOD 20-22 May 2010 and LOCATION London

Show Description

Ideas (1) | Websites (0) | Connections (2) | People & Groups (1)

Visualize as:

DEMO: A Question with a TIME-PERIOD 20-22 May 2010 and LOCATION London
Wed, 19 May 2010 23:00:00 GMT
Fri, 21 May 2010 23:00:00 GMT

May 20 | May 21 | May 22 | May 23 | May 24

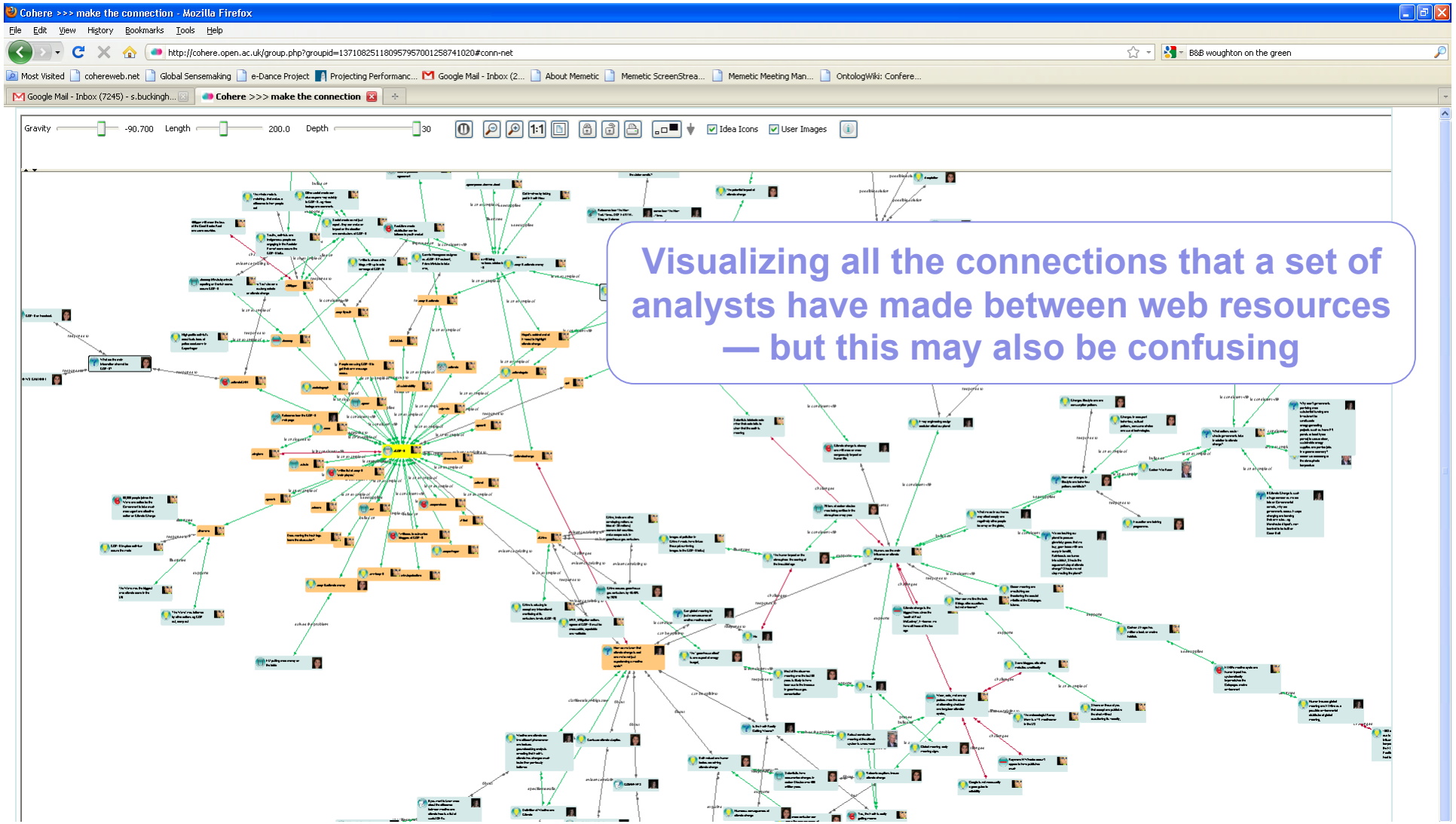
DEMO: A Question with a TIME-PERIOD 20-22 May 2010 and LOCATION London

Timeline © SIMILE

May | Jun

Transferring data from cohere.open.ac.uk...

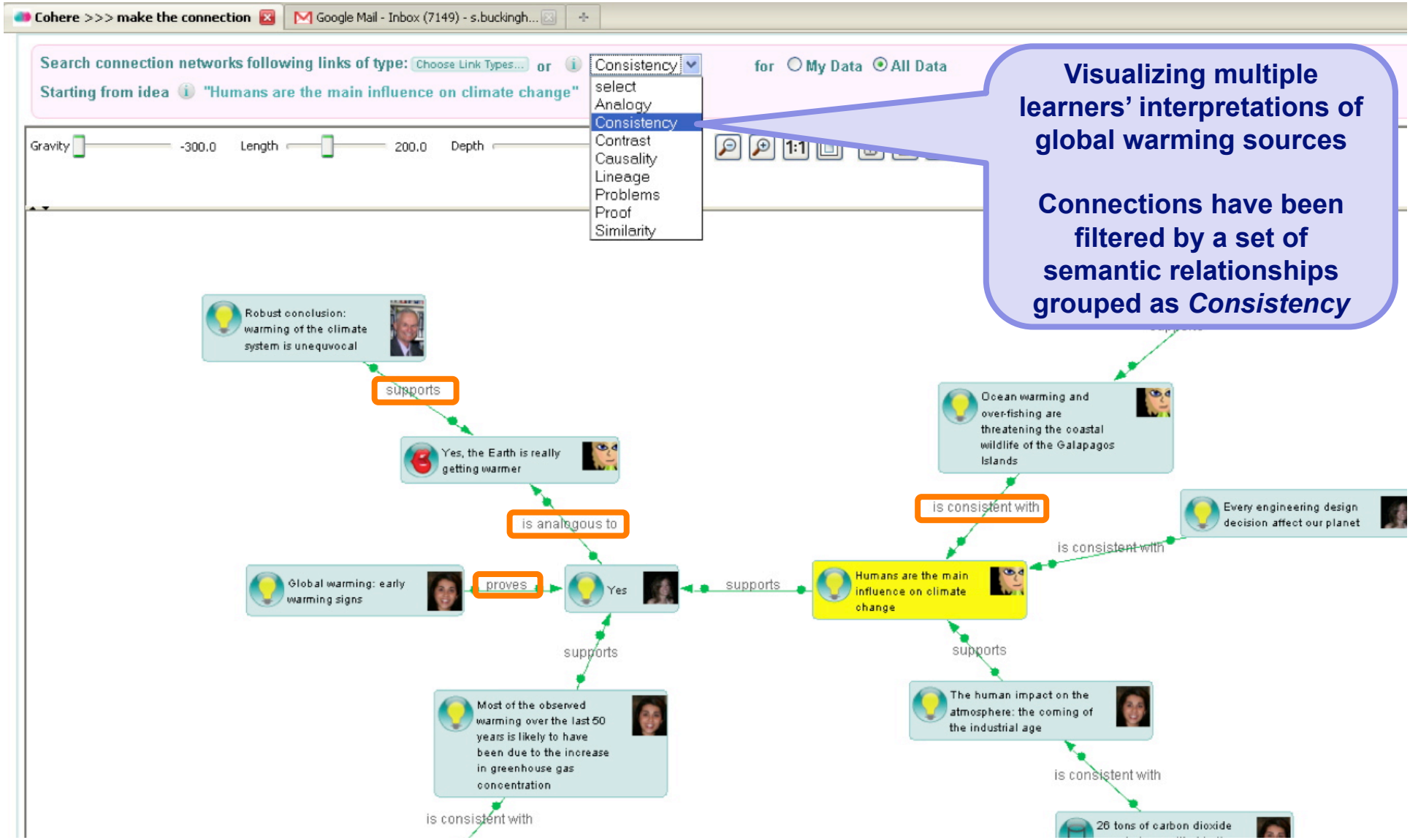
cohere seeing the connections people make as they annotate the web using Cohere



Visualizing all the connections that a set of analysts have made between web resources — but this may also be confusing

De Liddo, A. and Buckingham Shum, S. (2010). Cohere: A prototype for contested collective intelligence. In: *ACM Computer Supported Cooperative Work (CSCW 2010) - Workshop: Collective Intelligence In Organizations*, February 6-10, 2010, Savannah, Georgia, USA. http://oro.open.ac.uk/19554

cohere — semantic filter of argument map



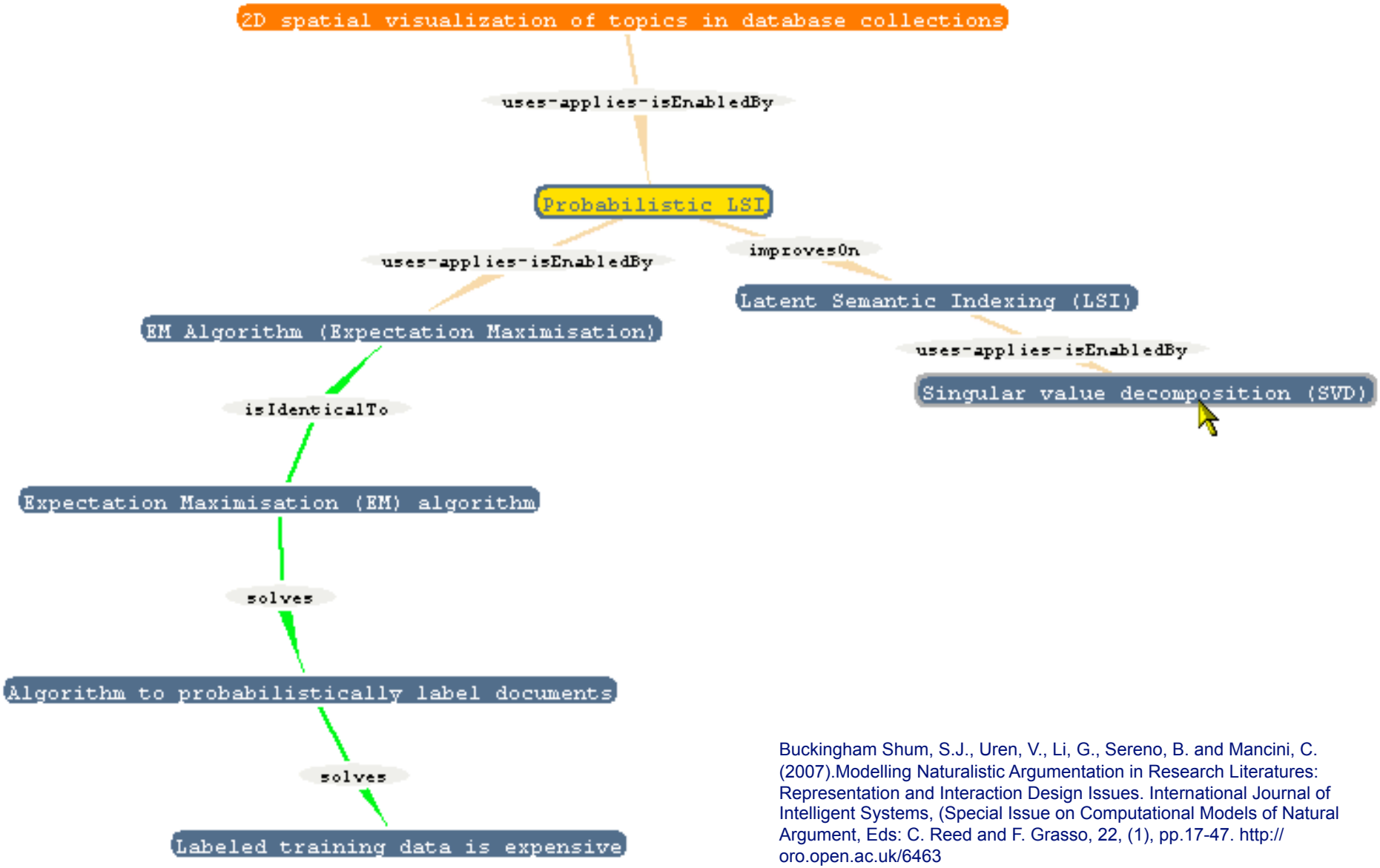
Visualizing multiple learners' interpretations of global warming sources

Connections have been filtered by a set of semantic relationships grouped as *Consistency*

De Liddo, A. and Buckingham Shum, S. (2010). Cohere: A prototype for contested collective intelligence. In: *ACM Computer Supported Cooperative Work (CSCW 2010) - Workshop: Collective Intelligence In Organizations*, February 6-10, 2010, Savannah, Georgia, USA. http://oro.open.ac.uk/19554

"Semantic Google Scholar":

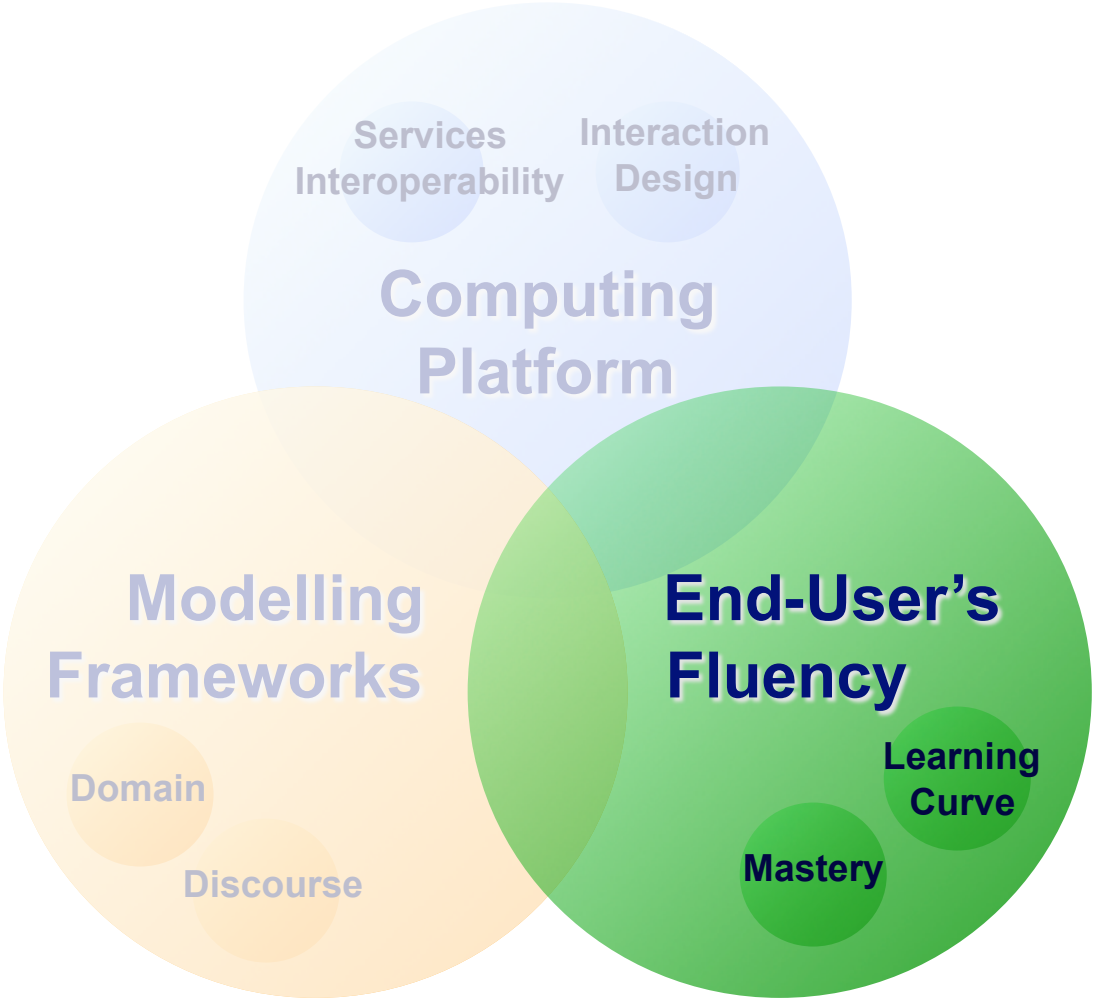
Query: *What is the lineage of this idea?*



Buckingham Shum, S.J., Uren, V., Li, G., Sereno, B. and Mancini, C. (2007).Modelling Naturalistic Argumentation in Research Literatures: Representation and Interaction Design Issues. International Journal of Intelligent Systems, (Special Issue on Computational Models of Natural Argument, Eds: C. Reed and F. Grasso, 22, (1), pp.17-47. http://oro.open.ac.uk/6463

What are the *habits of mind* and *skills* that we need, to move from promising technologies, to *sensemaking tools*?

Human-Centred Computing for Sensemaking



Knowledge Art (Al Selvin) How can we add immediate value to team meeting with Design Rationale representations?
Extract from a generic framework:

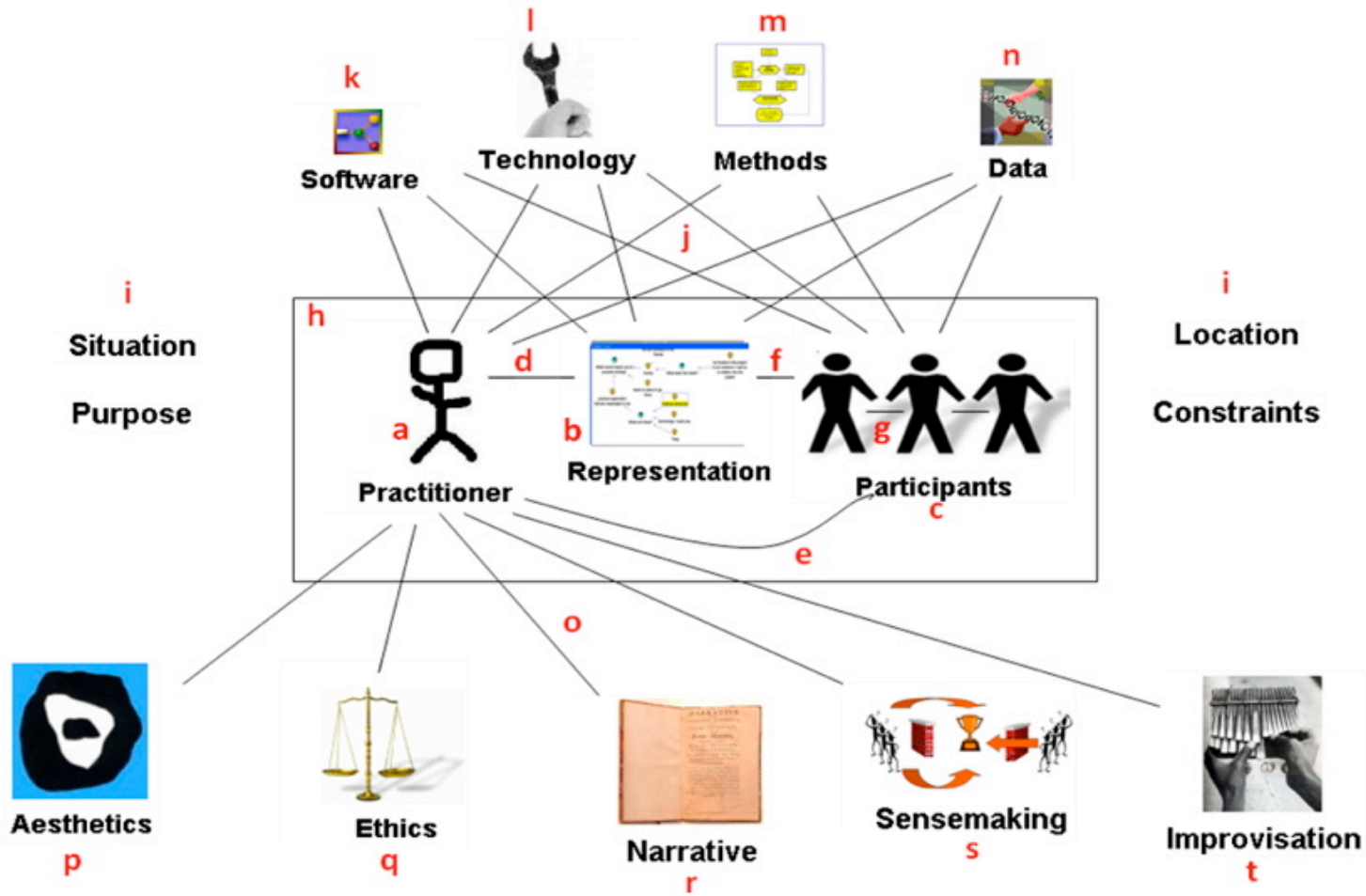


Figure 3: A framework for understanding participatory design rationale practice.

Selvin, A., Buckingham Shum, S.J. & Aakhus, M. (2010). The Practice Level in Participatory Design Rationale: Studying Practitioner Moves and Choices. Human Technology: An Interdisciplinary Journal of Humans in ICT Environments (Special Issue on Creativity and Rationale, Ed. Jack Carroll), May 2010. http://oro.open.ac.uk/20948

Knowledge Art (Al Selvin) How can we add immediate value to team meeting with Design Rationale representations?

Extract from a generic framework:

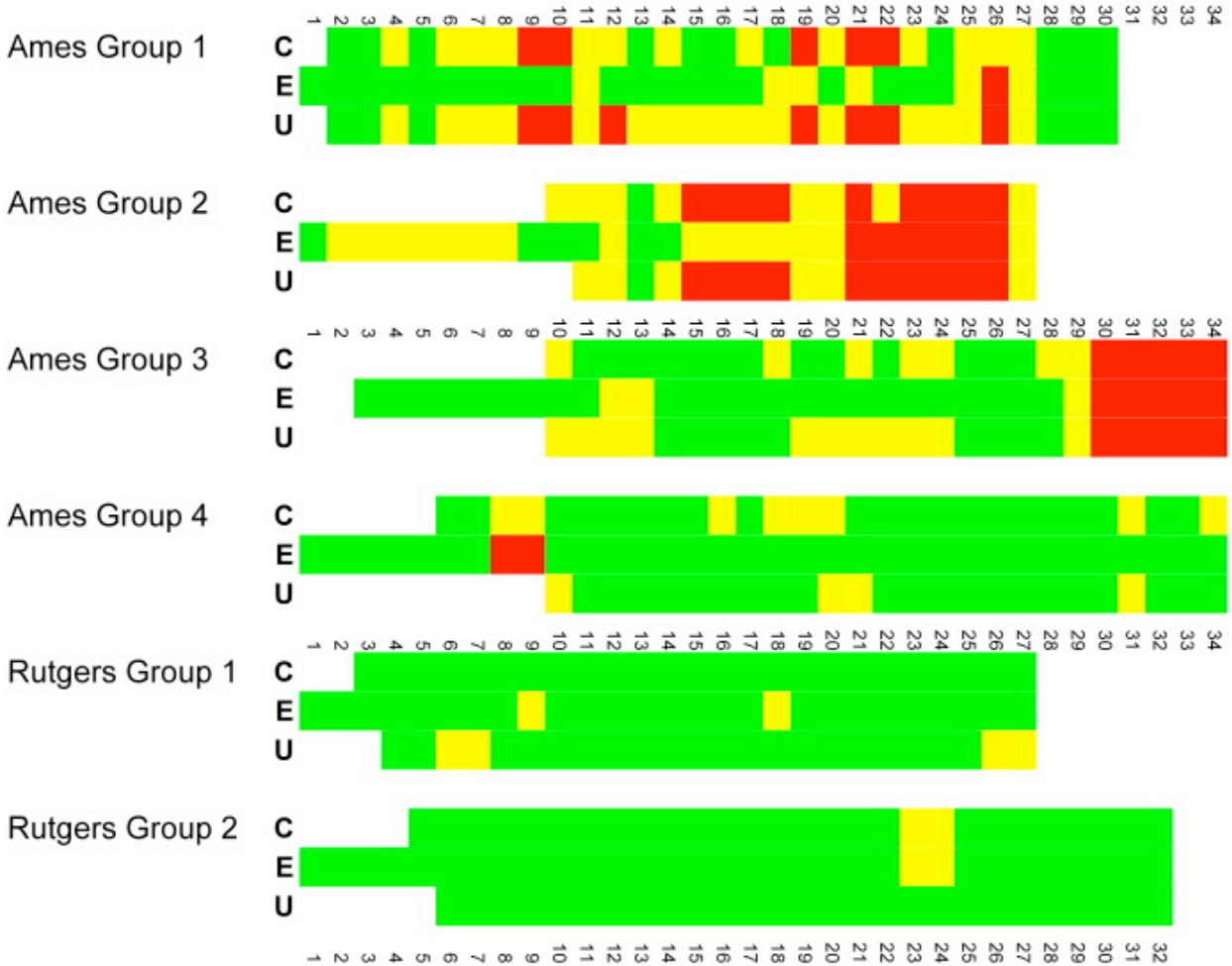


Figure 7: Heat maps from *Coherence/Engagement/Usefulness* analyses.

Selvin, A., Buckingham Shum, S.J. & Aakhus, M. (2010). The Practice Level in Participatory Design Rationale: Studying Practitioner Moves and Choices. Human Technology: An Interdisciplinary Journal of Humans in ICT Environments (Special Issue on Creativity and Rationale, Ed. Jack Carroll), May 2010. http://oro.open.ac.uk/20948

Knowledge Art (Al Selvin) How can we add immediate value to team meeting with Design Rationale representations?

Extract from a generic framework:

Element	Descriptive and normative questions
(A.1) Imposing their own coherence and values on a situation	○ What coherence is the practitioner imposing on the situation? ○ What values is the practitioner imposing on the situation? ○ In what ways are these congruent (or not) with those of the participants?
(A.2) Constructing narratives to account for how the situation arrived at the current pass; causes and breaches in canonicity	○ What is the narrative the practitioner is using to construct the situation? ○ What is its degree of internal consistency? ○ How evocative and inclusive is it? ○ How useful is it?
(A.3) Eliminating prejudices, preconceptions, and personal desires in their work	○ What prejudices may be active? ○ What preconceptions may be active? ○ What personal desires or goals may be active?
(A.4) Personal authenticity in the practice setting	○ In what ways is the practitioner acting in an authentic manner (vs. received, affected, etc.)?
(A.5) Mediated objects and other interventions should preserve openness and dialogicity	○ How do the representations the practitioner constructs or modifies foster openness and dialogicity? ○ How do they inhibit them?

Selvin, A., Buckingham Shum, S.J. & Aakhus, M. (2010). The Practice Level in Participatory Design Rationale: Studying Practitioner Moves and Choices. Human Technology: An Interdisciplinary Journal of Humans in ICT Environments (Special Issue on Creativity and Rationale, Ed. Jack Carroll), May 2010. http://oro.open.ac.uk/20948

Learning to Learn: 7 Dimensions of "Learning Power"

Factor analysis of the literature plus expert interviews: identified seven dimensions of effective "learning power", since validated empirically with learners at many levels. (Deakin Crick, Broadfoot and Claxton, 2004)

Being Stuck & Static	⟷	Changing & Learning
Data Accumulation	⟷	Meaning Making
Passivity	⟷	Critical Curiosity
Being Rule Bound	⟷	Creativity
Isolation & Dependence	⟷	Learning Relationships
Being Robotic	⟷	Strategic Awareness
Fragility & Dependence	⟷	Resilience

Professional development in schools, colleges and business:
ViTaL: http://www.vitalhub.net/vp_research-elli.htm

Learning to Learn: 7 Dimensions of Learning Power

Factor analysis of the literature plus expert interviews: identified seven dimensions of effective "learning power", since validated empirically with learners at many levels. (Deakin Crick, Broadfoot and Claxton, 2004)

Resilience

Definition

Resilient learners like a challenge. They accept that everyone can find learning hard sometimes and are not frightened by finding something difficult. They have a high degree of 'stickability'. They are not fragile and can tolerate the feelings of anger, fear, frustration and anxiety that sometimes accompany learning.

Strategic awareness

Definition

Strategic learners think about how they learn. They talk about how they will go about something and consider the habits, preferences, strengths and weaknesses they bring to the task. They are aware of their own feelings about learning and know how to manage them. They can talk about personal learning preferences.

Critical Curiosity

Definition

Effective learners in this dimension like to delve deeper to find out what is going on. They like to 'get at the truth' by asking questions such as Why? What? When? Where? How? etc.

They are less likely to accept information uncritically or just because someone says so.

Creativity

Definition

Creative learners are playful, they like a challenge and are willing to take risks. They like to look at a problem from many different perspectives and will use their imagination, letting their mind 'float free' to find creative solutions. They listen to their intuition and follow hunches in their learning.

Learning to Learn: 7 Dimensions of Learning Power

Factor analysis of the literature plus expert interviews: identified seven dimensions of effective "learning power", since validated empirically with learners at many levels. (Deakin Crick, Broadfoot and Claxton, 2004)

Meaning Making

Definition

Students who effectively make meaning can link information between subject areas and across learning contexts. They connect learning at home with learning in school and learning from previous years with learning occurring now. Effective learners in this dimension engage their own values and stories in learning and create personal relevance from information they learn.

Learning Relationships

Definition

Learners who have quality learning relationships find it useful and exciting to share thoughts and ideas with others, yet they can work equally effectively on their own. They make good use of adult sources of support and guidance at home and in the community. They draw on their community's worldviews and traditions.

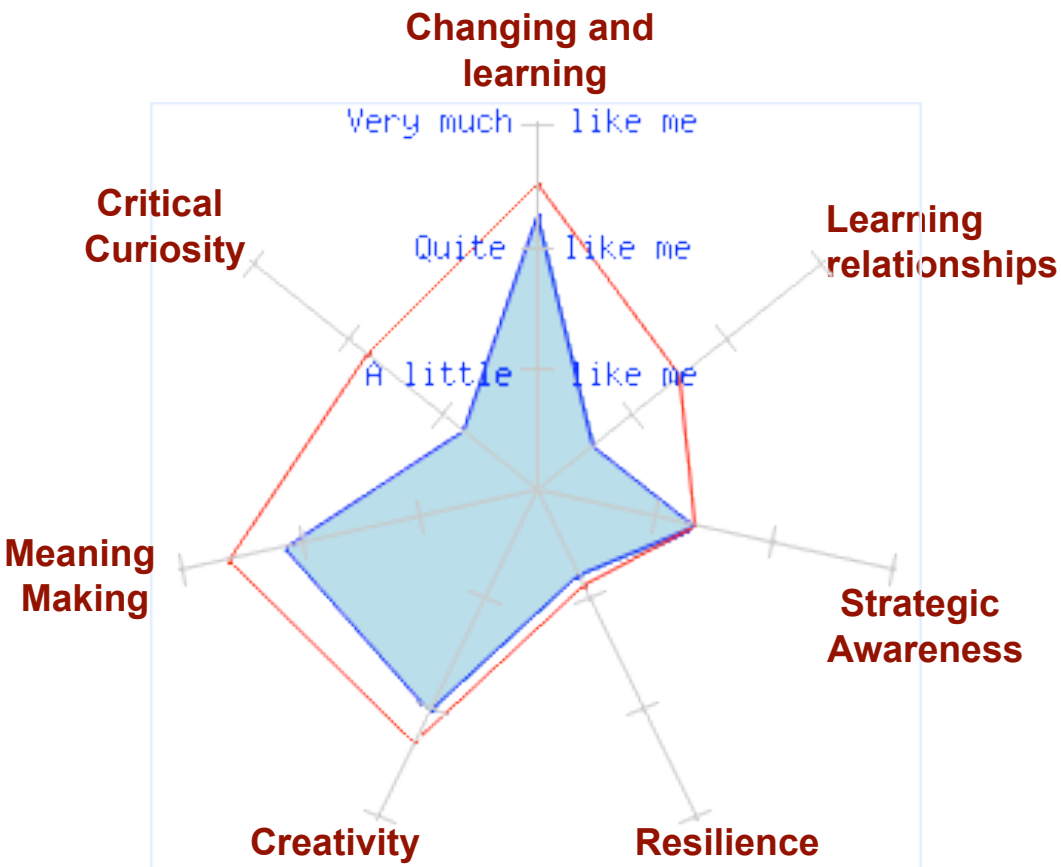
Changing and Learning

Definition

Learners who are strong in this dimension know that learning is learnable. They believe that through effort their minds can get bigger and stronger just as their bodies can. They gain pleasure and self-esteem from expanding their capacity to learn.

ELLI profile showing pre/post stretch following mentoring and targetted intervention

ELLI: Effective Lifelong Learning Inventory (Ruth Deakin Crick, U. Bristol)
A web questionnaire generates a spider diagram summarising the learner's self-perception: the basis for a mentored discussion and strategic priorities



ViTaL: http://www.vitalhub.net/vp_research-elli.htm

future trends

machine annotation of sensemaking within text

(Ágnes Sándor, Xerox)

Rhetorical functions in academic articles

CONTRAST WITH PREVIOUS WORK:

–This somewhat unorthodox view resolves a number of apparent paradoxes, such as observations of enhanced superoxide generation by in situ mitochondria during excitotoxic exposure, since isolated mitochondria generate superoxide only under conditions of high delta psi m.

–In contrast with previous hypotheses, compact plaques form before significant deposition of diffuse A beta, suggesting that different mechanisms are involved in the deposition of diffuse amyloid and the aggregation into plaques.

–The patterns of neurotoxicity possessed a complex pharmacological profile, demonstrated an apoptotic-necrotic continuum and were inconsistent with past findings, further outlining the importance of characterizing novel compounds at native receptors.

BACKGROUND KNOWLEDGE:

–Recent studies indicate that ligands of the peroxisome proliferator - activated receptors - gamma (PPAR-gamma) alter cardiac remodeling during chronic ischemia.

–AMH promoter sequence variations or the previously proposed SF3a2-AMH fusion co - transcripts cannot be responsible for aberrant AMH expression leading to Mullerian duct degradation.

–Vascular endothelial growth factor (VEGF) is universally accepted as a primary factor in the regulation of vessel patency in vascular networks throughout the body and including the retina.

OPEN QUESTION:

–Recent studies have implicated ubiquitin-mediated protein degradation in synaptic development, function, and plasticity, but little is known about the regulatory mechanisms controlling ubiquitylation in neurons.

–Although the APC/C has been detected in several differentiated cell types, a functional role for the complex in postmitotic cells has been elusive.

–Current data is insufficient to conclude whether IVF patients who display AR CAG expansion may transfer infertility or premutation of neurodegenerative disease to their descendants.

Sándor, Á., Vorndran, A. (2010). The detection of salient messages from social science research papers and its application in document search. Workshop Natural Language Processing in Social Sciences, May 10-14. Buenos Aires.
Sándor, Á. (2007). Modeling metadiscourse conveying the author's rhetorical strategy in biomedical research abstracts. Revue Française de Linguistique Appliquée 200(2), pp. 97--109.

document PUBMED:15795929

document details

id	15795929
date	2005 May 1
in	J Neurosci Res
authors	Feuillette, SÃ©bastien; Blard, Olivier; Lecourtois, Magalie; FrÃ©bourg, Thierry; Campion, Dominique; Dumanchin, CÃ©cile;
title	**Tau** is not normally *degraded* by the proteasome
abstract	**Tau**-positive inclusions in neurons are consistent neuropathologic features of the most common causes of dementias such Alzheimer's disease and frontotemporal dementia. Ubiquitinated **tau**-positive inclusions have been reported in brains of Alzheimer's disease patients, but involvement of the **ubiquitin**-dependent proteasomal system in **tau** *degradation* remains controversial. Before considering the **tau** *degradation* in pathologic conditions, it is important to determine whether or not endogenous **tau** is normally *degraded* by the proteasome pathway. We therefore investigated this question using two complementary approaches in vitro and in vivo. Firstly, SH-SY5Y **human** neuroblastoma cells were treated with different proteasome **inhibitors**, MG132, lactacystin, and epoxomicin. Under these conditions, neither total nor phosphorylated endogenous **tau** ***protein*** levels were increased. Instead, an unexpected decrease of **tau** ***protein*** was observed. Secondly, we took advantage of a temperature-sensitive mutant allele of the 20S proteasome in Drosophila. Genetic inactivation of the proteasome also resulted in a decrease of **tau** levels in Drosophila. These results obtained in vitro and in vivo demonstrate that endogenous **tau** is not normally *degraded* by the proteasome. (c) 2005 Wiley-Liss, Inc.

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document PUBMED:15804428

document details

id	15804428
date	2005 Apr 8
in	Brain Res
authors	Nakajima, T; Takauchi, S; Ohara, K; Kokai, M; Nishii, R; Maeda, S; Takanaga, A; Tanaka, T; Takeda, M; Seki, M; Morita, Y;
title	alpha-Synuclein-positive structures induced in leupeptin-infused **rats**
abstract	Abnormal accumulation of alpha-**synuclein** is regarded as a key pathological step in a wide range of neurodegenerative processes, not only in Parkinson's disease (PD) and dementia with Lewy bodies (DLB) but also in multiple-system atrophy (MSA). Nevertheless, the mechanism of alpha-**synuclein** accumulation remains unclear. Leupeptin, a protease **inhibitor**, has been known to cause various neuropathological changes in vivo resembling those of aging or neurodegenerative processes in the **human** brain, including the accumulation of neuronal processes and neuronal cytoskeletal abnormalities leading to neurofibrillary tangle (NFT)-like formations. In the present study, we administered leupeptin into the **rat** ventricle and found that alpha-**synuclein**-positive structures appeared widely in the neuronal tissue, mainly in neuronal processes of the fimbria and alveus. Immunoelectron microscopic study revealed that alpha-**synuclein** immunoreactivity was located in the swollen axons of the fimbria and alveus, especially in the dilated presynaptic terminals. In addition colocalization of alpha-**synuclein** with **ubiquitin** was rarely observed in confocal laser-scan image. This is the first report of experimentally induced in vivo accumulation of alpha-**synuclein** in non-transgenic rodent brain injected with a well-characterized protease **inhibitor** by an infusion pump. The present finding suggests that the local accumulation of alpha-**synuclein** might be induced by the impaired metabolism of alpha-**synuclein**, which are likely related to lysosomal or **ubiquitin**-independent proteasomal systems

key *textword meshterm* neg level **subj1** **subj2** summarysent pearlpssent pssent pssummarysent logic

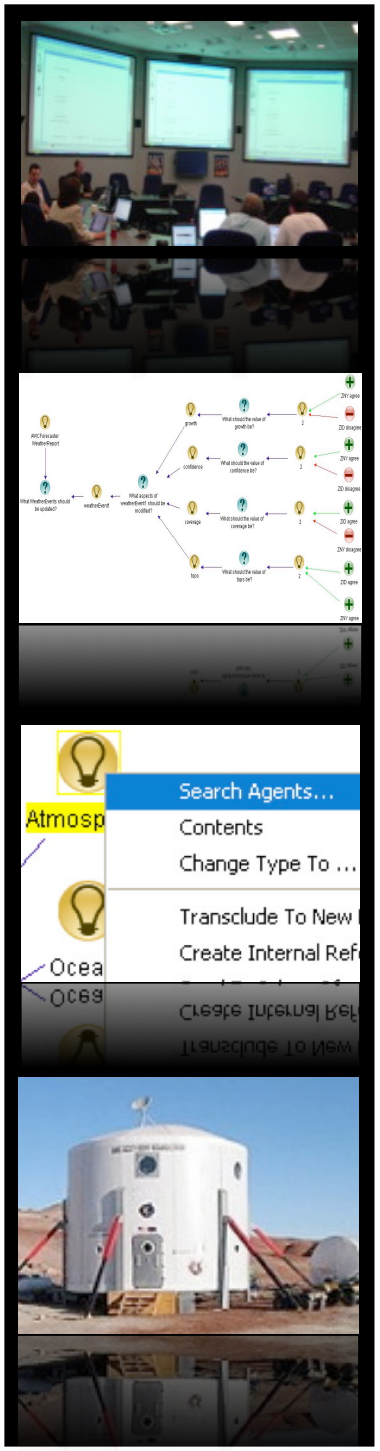
document PUBMED:15781872

CONTRAST WITH PREVIOUS WORK SUMMARY BACKGROUND KNOWLEDGE OPEN QUESTION

Sándor, Á., Vorndran, A. (2009). Detecting key sentences for automatic assistance in peer reviewing research articles in educational sciences. In Proceedings of the 2009 Workshop on Text and Citation Analysis for Scholarly Digital Libraries, ACL-IJCNLP 2009, Suntec, Singapore, 7 August 2009 Singapore (2009), pp. 36--44. http://aye.comp.nus.edu.sg/nlpir4dl

xerox

adding software agents



3rd International Conference on Computational Modelling of Argument
Desenzano del Garda, Italy, 8-10 Sept. 2010

Paper, slides + blog: http://people.kmi.open.ac.uk/sbs

Software Agents in Support of Human Argument Mapping

Simon Buckingham Shum

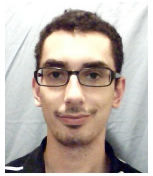
Knowledge Media Institute
Open University

Maarten Sierhuis

NASA Ames Research Center
Technical University of Delft
Carnegie Mellon University SV

Jack Park

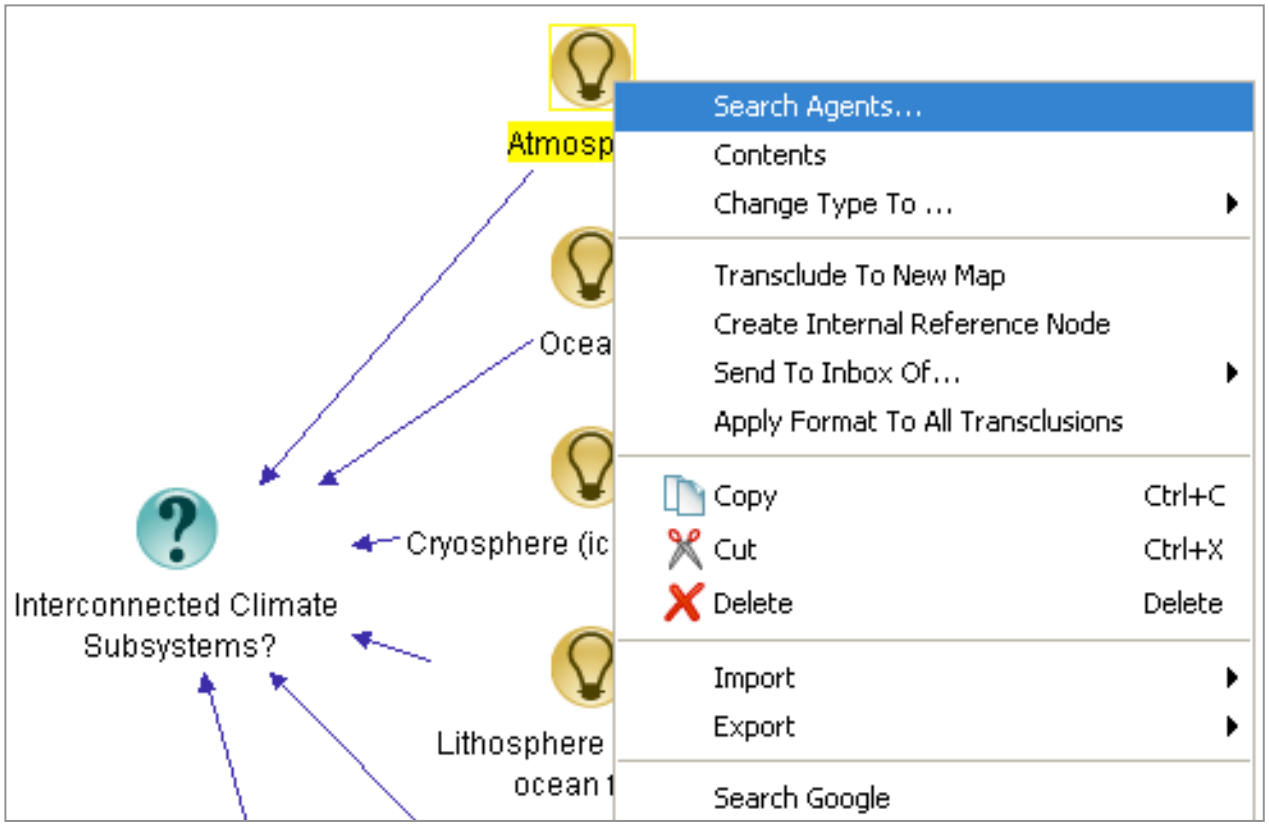
Knowledge Media Institute
Open University

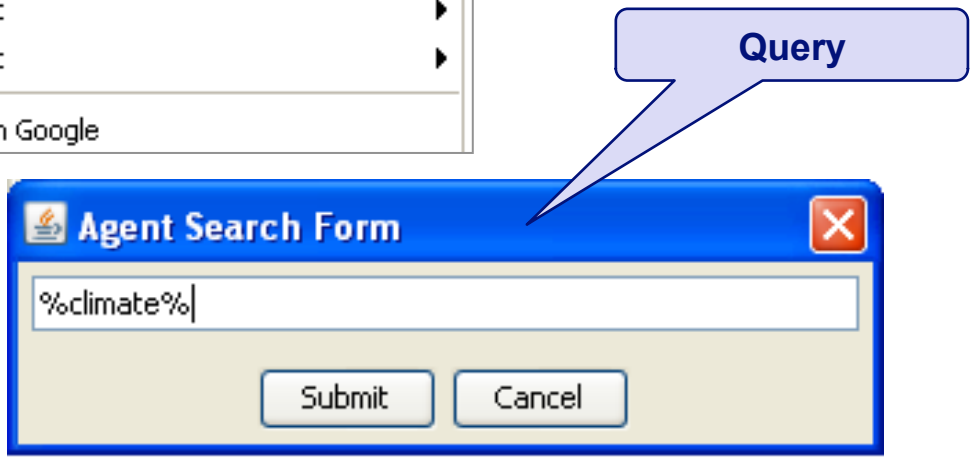


Matthew Brown

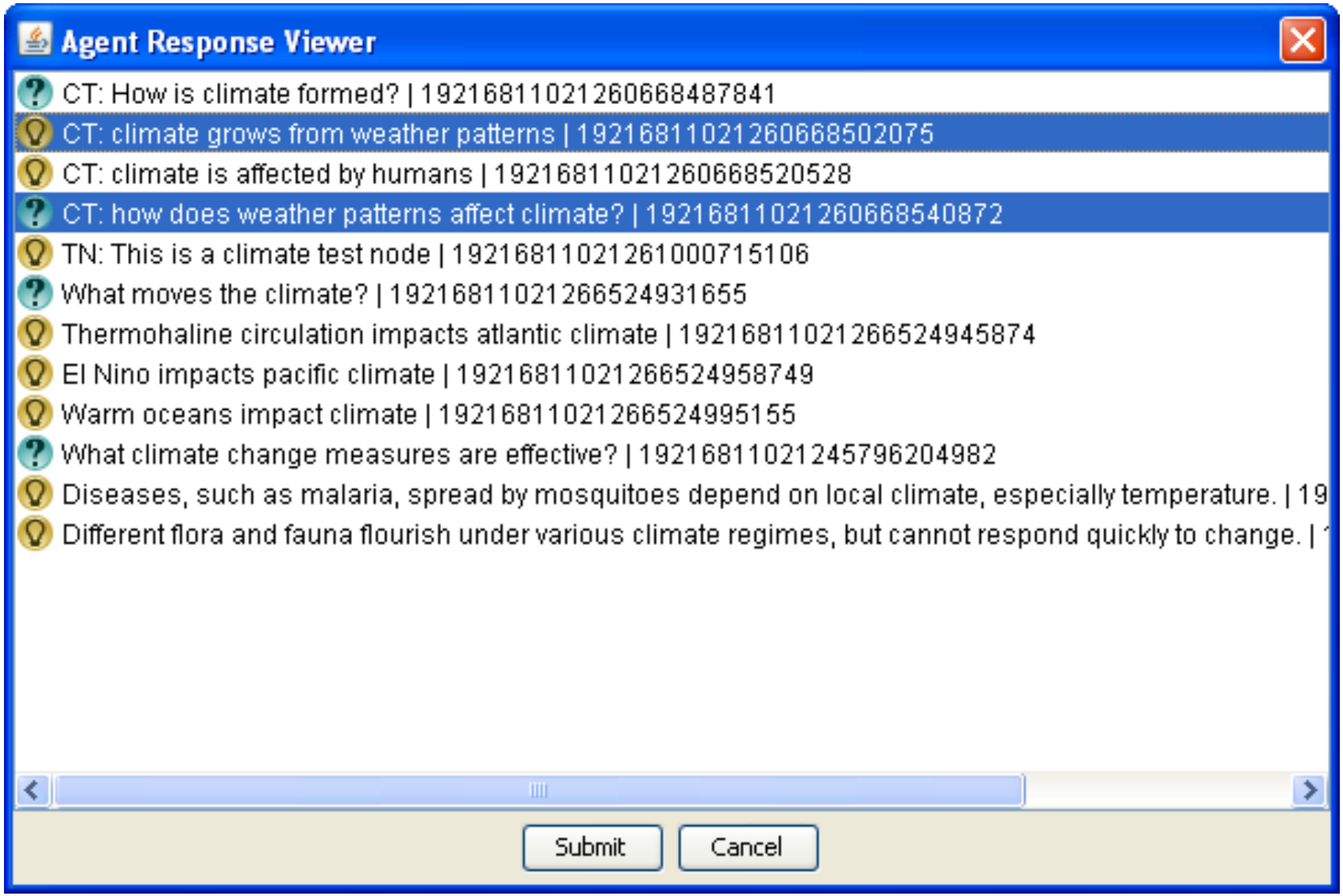
Carnegie Mellon University SV
University of Utah

Calling a Brahms agent to search remote maps

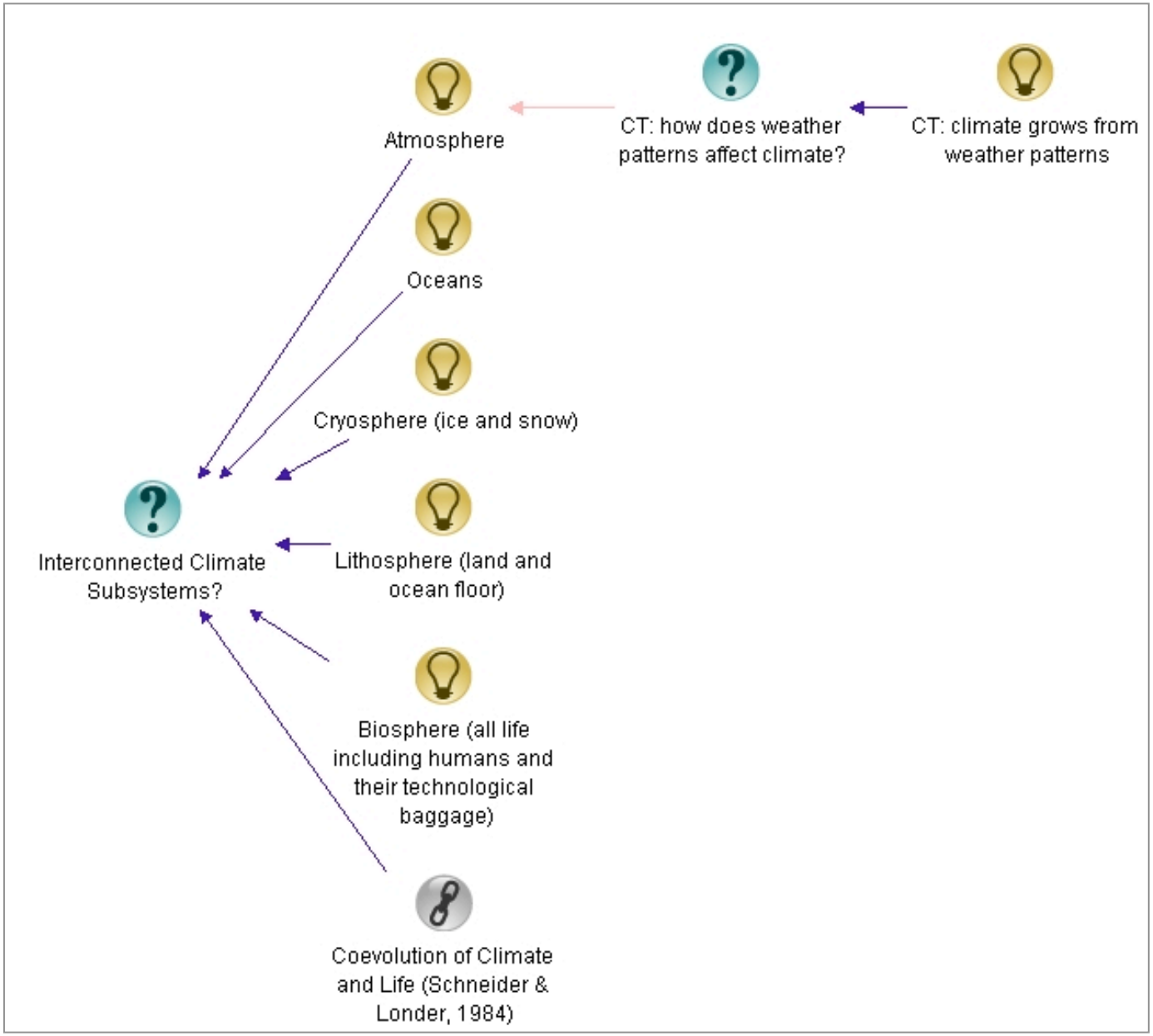




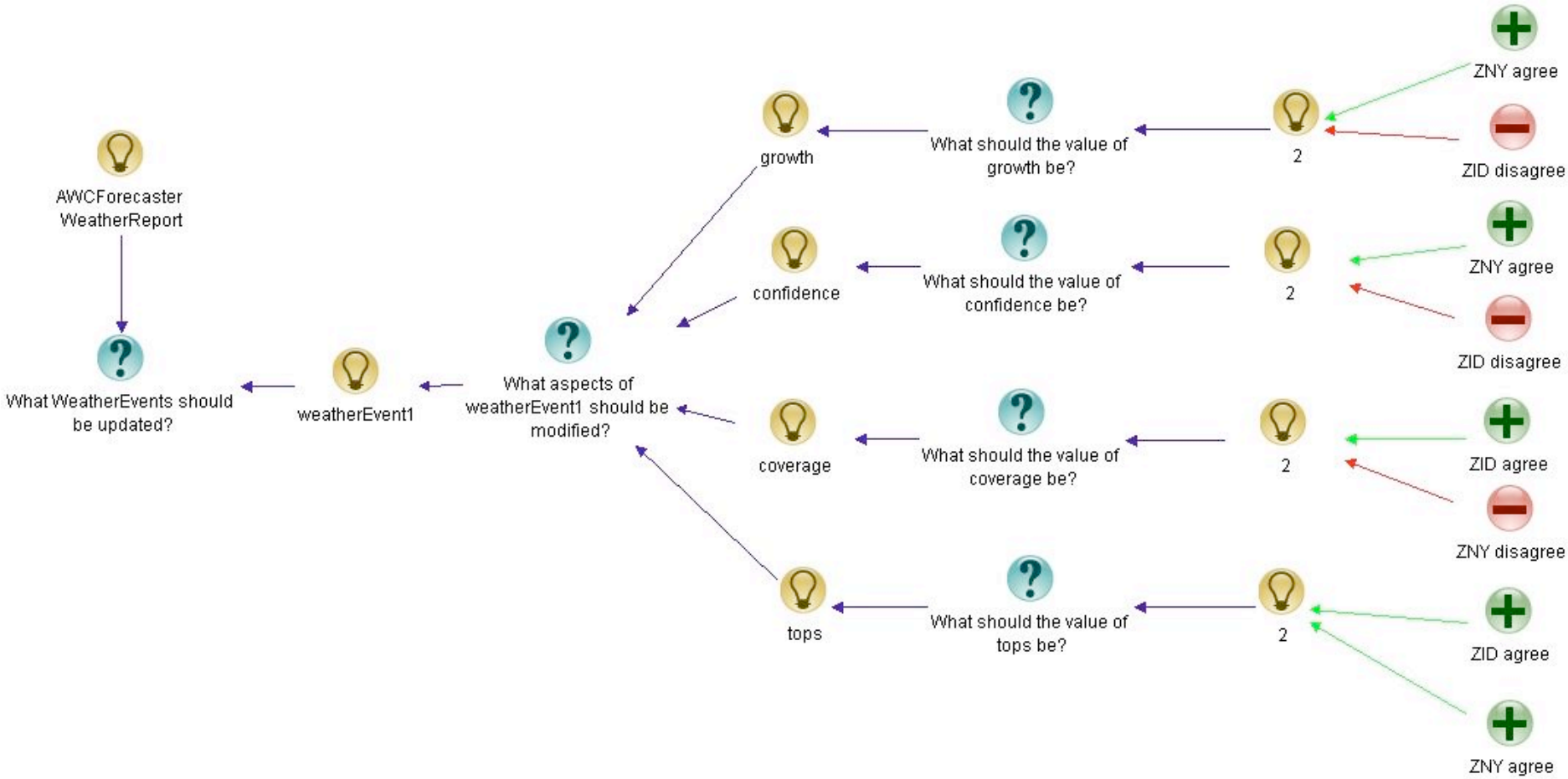
Returned Results



Dialogue Map with Query Results added



Human-readable Compendium map of an IBIS agent conversation



adding more formal logics to evaluate arguments

see *International Conferences on Computational Modelling of Argument*: www.comma-conf.org

Articles, books, news, movies, software, user/developer community…

http://projects.kmi.open.ac.uk/hyperdiscourse

Compendium Institute

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KNOWLEDGE MEDIA KMi INSTITUTE