
Ενότητα 7

Υποστήριξη Επιχειρηματολογίας

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Μαθησιακοί στόχοι

- Ανάλυση των βασικών χαρακτηριστικών της διαδικασίας ανταλλαγής επιχειρημάτων
- Εισαγωγή στα Συστήματα Υποστήριξης Επιχειρηματολογίας
- Ανάδειξη σχετικών προκλήσεων σε σύγχρονα περιβάλλοντα συνεργασίας

Περιεχόμενα ενότητας

- Επιχείρημα και επιχειρηματολογία
- Μοντέλα επιχειρηματολογίας
- Συστήματα Υποστήριξης Επιχειρηματολογίας
- Προκλήσεις



what is an argument?

Wicked problems

- Μη καλά δομημένα και δύσκολα αντιμετωπίσιμα προβλήματα, τα οποία μπορούν να επιλυθούν μέσω επιχειρηματολογικών συζητήσεων (argumentative discourses) και συνεργασίας μεταξύ των εμπλεκόμενων ατόμων (Rittel & Webber, 1973)
- Στα προβλήματα αυτά, **συναίνεση** επιτυγχάνεται (βαθμιαία) μέσω μιας διαδικασίας **συνεργατικής θεώρησης εναλλακτικών - και συχνά ανταγωνιστικών - μορφών αναπαράστασης και αξιολόγησης των δεδομένων του προβλήματος** αλλά και των προτεραιοτήτων και περιορισμών που θέτουν τα μέλη της ομάδας επίλυσης του προβλήματος
- Η εφαρμογή κλασσικών εργαλείων μοντελοποίησης και ανάλυσης ενός περιβάλλοντος λήψης αποφάσεων είναι αδύνατη πριν την πλήρη διευκρίνιση και συμφωνία όλων των πτυχών του προβλήματος μεταξύ των μελών της ομάδας

Argument

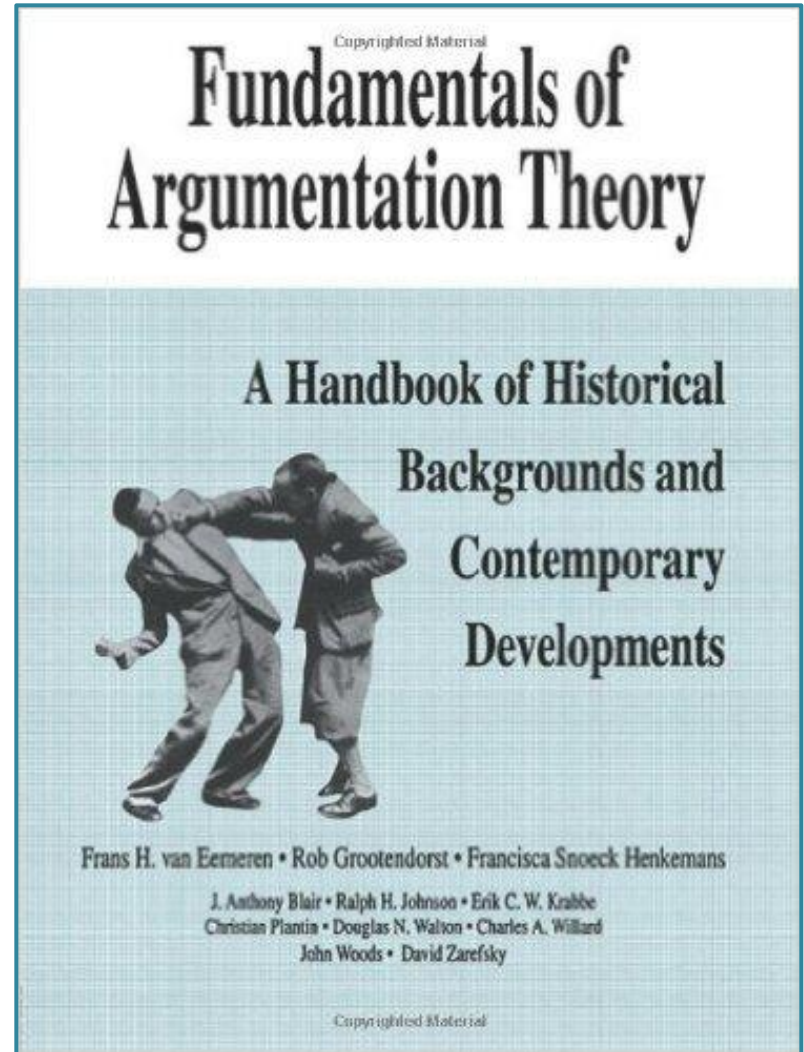
- A fact or assertion offered as evidence that something is true
 - "it was a strong argument that his hypothesis was true"
- **Controversy**: a contentious speech act; a dispute where there is strong disagreement
 - "they were involved in a violent argument"
- A discussion in which reasons are advanced **for and against** some proposition or proposal
 - "the argument over foreign aid goes on and on"

Argumentation

- A **type of discourse** in speech or writing that develops or debates a topic in a logical or persuasive way
 - Exploration of a problem by investigating all sides of it
 - Persuasion through reason
- Argumentation deals with **complex issues that can be debated**
 - It is an appeal predominantly to logic and reason
- A speech or writing intended to **convince by establishing truth**
 - Most argumentation begins with a statement of an idea or opinion, which is then supported with logical evidence
 - Another technique of argumentation is the anticipation and rebuttal of opposing views
- The methodical process of **logical reasoning**
 - "I can't follow your line of reasoning"

Argumentation (cont.)

“Argumentation is a verbal and social activity of reason aimed at increasing (or decreasing) the acceptability of a controversial standpoint for the listener or reader, by putting forward a constellation of propositions intended to justify (or refute) the standpoint before a rational judge”



Επιχειρηματολογικές συζητήσεις

- Η **θεωρητική έρευνα** που έχει διεξαχθεί στο χώρο ακολουθεί διαφορετικές κατευθύνσεις:
 - **Φιλοσοφική**, σύμφωνα με την οποία η επιχειρηματολογία θεωρείται ως ένας τρόπος «διαμόρφωσης θεωρίας» (theory formation)
 - **Γλωσσολογική** (linguistic), η οποία έχει επηρεαστεί από τη «θεωρία δράσεων ομιλίας» (speech act theory) και την ανάλυση των συζητήσεων (discourse analysis)
 - **Ρητορική**, όπου η επιχειρηματολογία μελετάται βασικά ως μια μορφή χειρισμού καταστάσεων μέσω της γλώσσας (manipulation through language)
 - **Ψυχολογική**, όπου εξετάζονται αναλυτικά οι συσχετίσεις μεταξύ των επιχειρημάτων και των γνωστικών διαδικασιών (cognitive processes)

Μοντέλα

Επιχειρηματολογίας

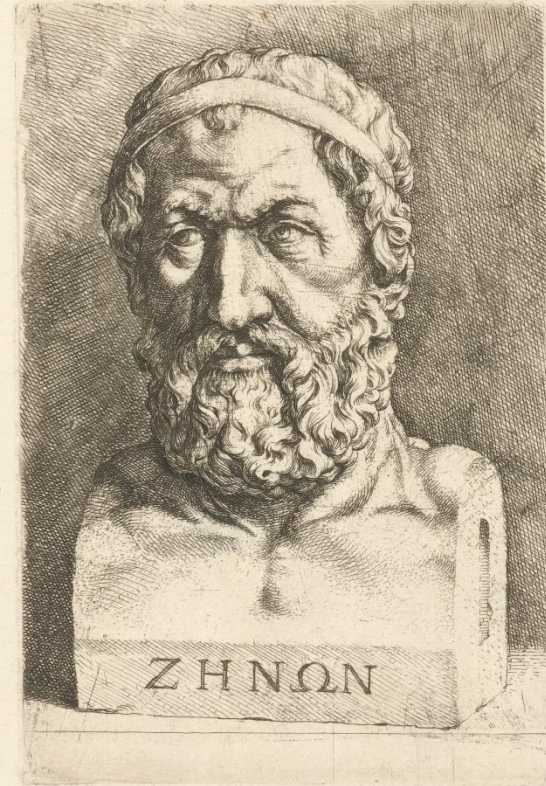


Πηγή: <https://flic.kr/p/d4j4tY>

The inventor of dialectics

Before Zeno, Greek thinkers favored presenting their philosophical views by writing poetry. Zeno began the grand shift away from poetry toward a prose that contained **explicit premises and conclusions**. And he employed the method of **indirect proof** in his paradoxes by temporarily assuming some **thesis** that he opposed and then attempting to **deduce an absurd conclusion or a contradiction**, thereby undermining the temporary assumption. This method of indirect proof (*reductio ad absurdum*) probably originated with his teacher Parmenides (although this is disputed in the scholarly literature), but Zeno used it more systematically.

Source: Internet Encyclopedia of Philosophy (<http://www.iep.utm.edu>)



Πηγή: <http://www.europeana.eu>

RP-P-1907-4485

Zeno of Elea (490 BC - 430 BC)

Pre-Socratic Greek philosopher, member
of the Eleatic School founded by
Parmenides

The earliest study of formal logic

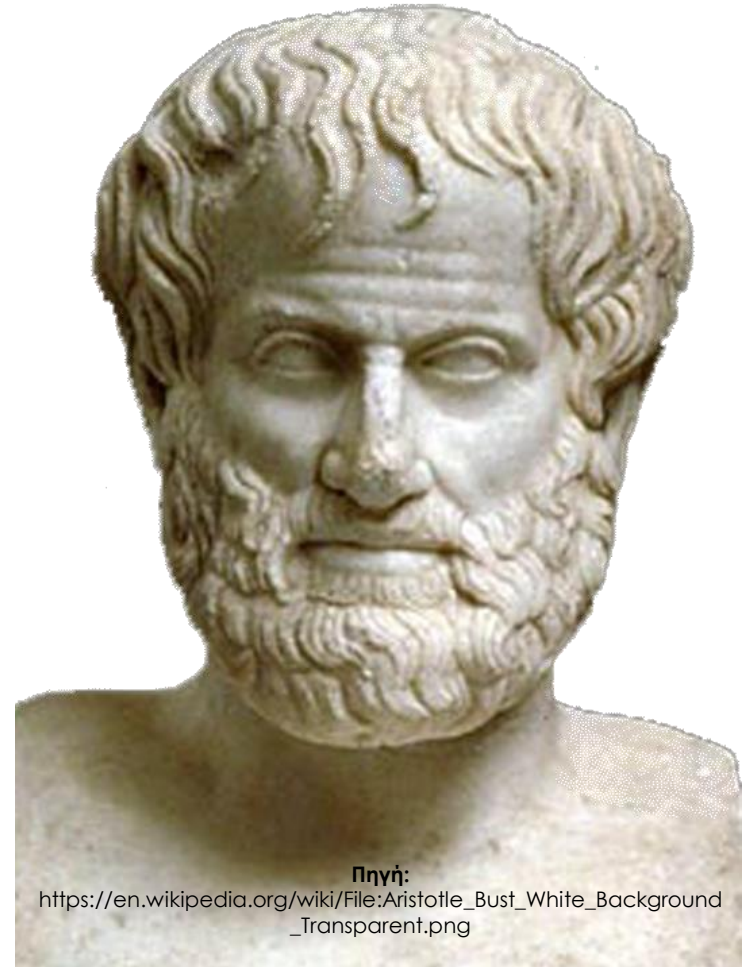
Aristotle's logic revolves around one notion: the **deduction (sullogismos)**.

Aristotle says: "A deduction is speech (logos) in which, certain things having been supposed, something different from those supposed **results of necessity** because of their being so" (Prior Analytics I.2, 24b18–20)

Each of the "things supposed" is a **premise (protasis)** of the argument, and what "results of necessity" is the **conclusion (sumperasma)**.

The core of this definition is the notion of "resulting of necessity". This corresponds to a modern notion of logical consequence: **X results of necessity from Y and Z if it would be impossible for X to be false when Y and Z are true.**

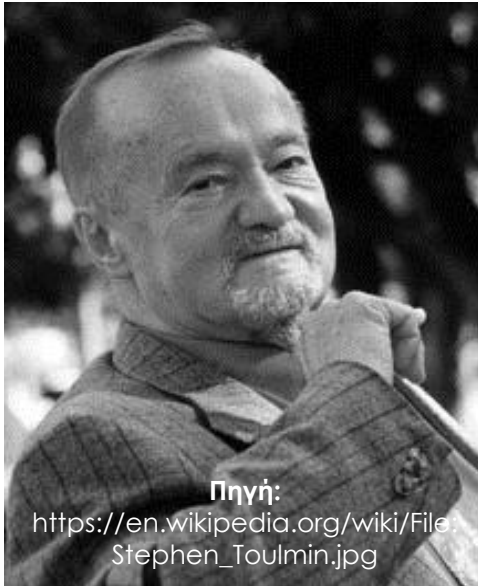
Source: Stanford Encyclopedia of Philosophy (<http://plato.stanford.edu/>)



Πηγή:
https://en.wikipedia.org/wiki/File:Aristotle_Bust_White_Background_Transparent.png

Aristotle (384 BC – 322 BC)
Greek philosopher and scientist

The Toulmin Model of Argumentation (1958)



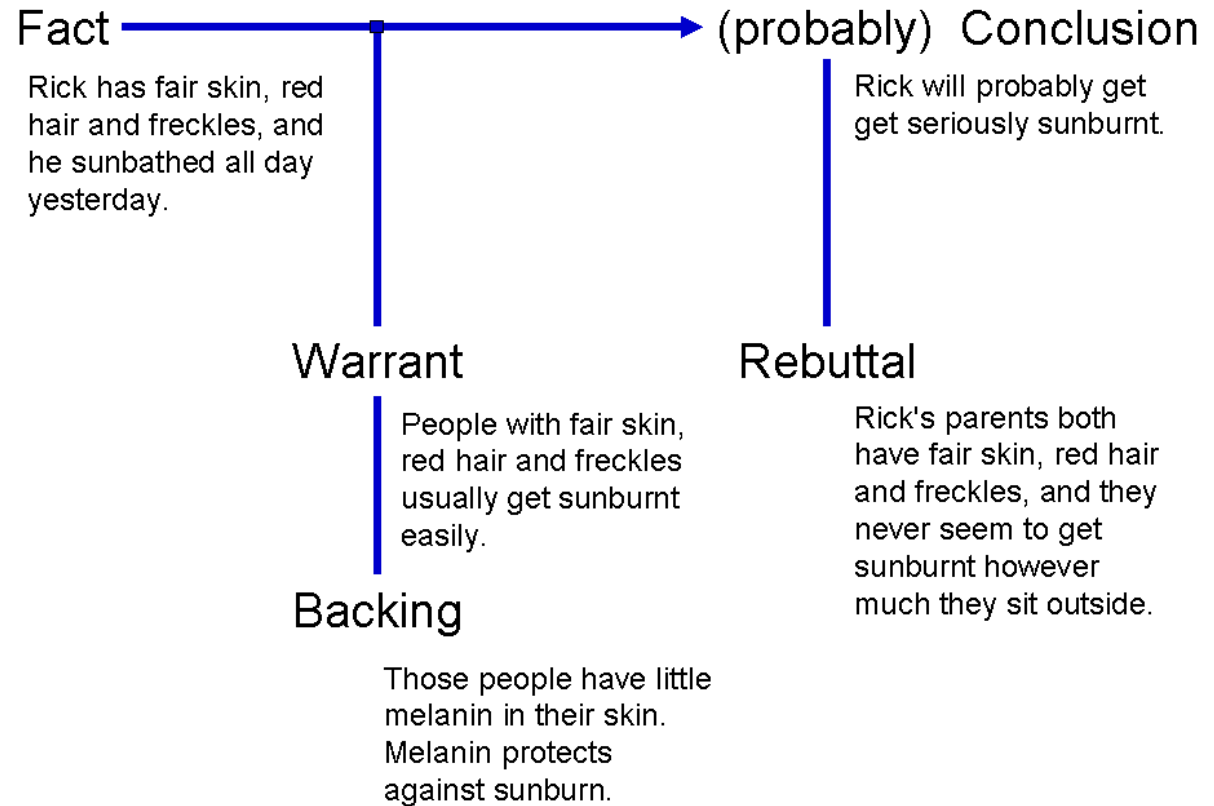
Πηγή:

https://en.wikipedia.org/wiki/File:Stephen_Toulmin.jpg

Stephen Toulmin

(1922-2009)

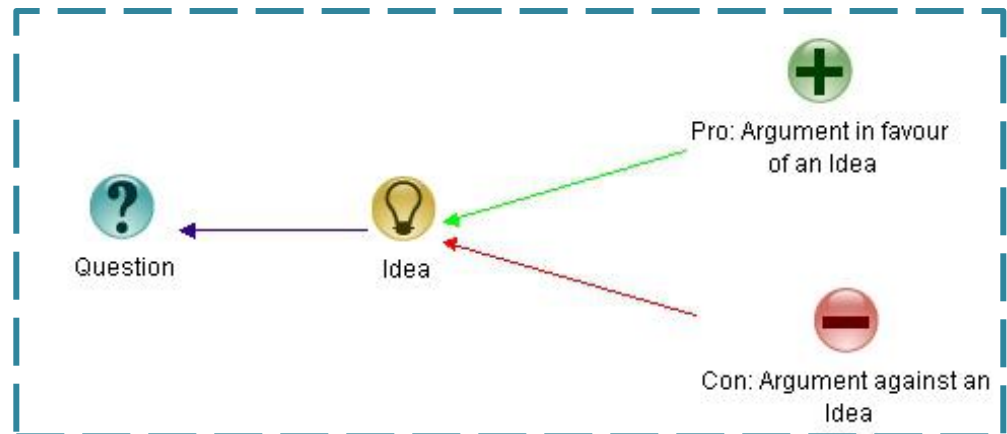
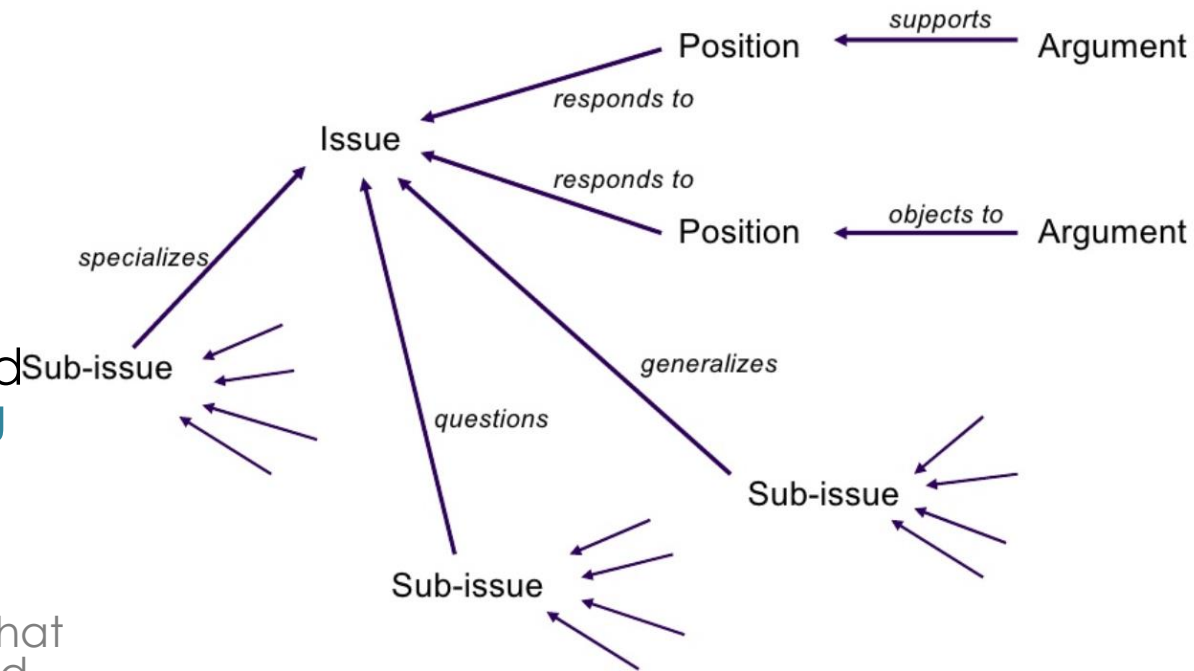
British philosopher



Πηγή: https://en.wikipedia.org/wiki/File:Toulmin_Argumentation_Example.gif

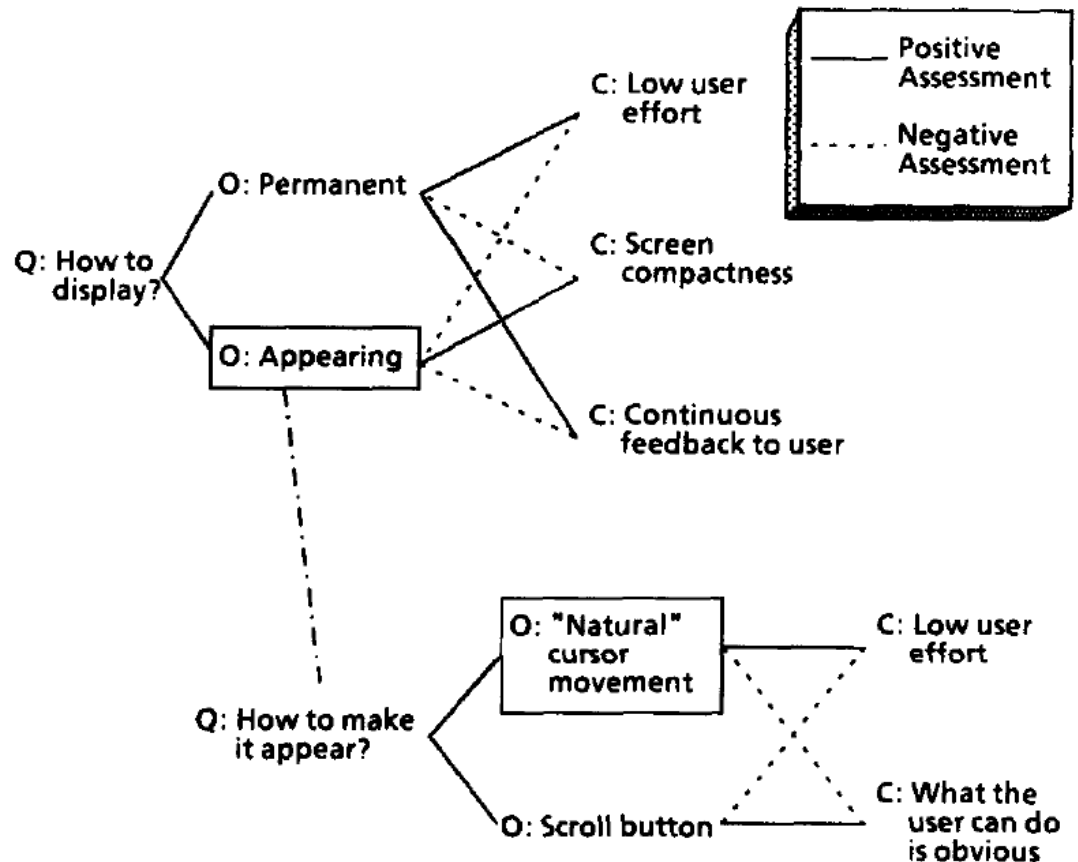
Issue-Based Information System (IBIS)

- Design rationale → dialogue mapping
- Invented by Werner Kunz & Horst Rittel (1970's) as a collaborative argumentation-based approach to tackling wicked problems
- Main elements
 - Issues (or questions) that need to be addressed.
 - Positions (or ideas): these are responses to questions
 - Arguments: these can be Pros (arguments supporting) or Cons (arguments against) an issue



The QOC model

- Hierarchical structure
- Main elements
 - Questions (and sub-questions): represent major issues of a design
 - Options: provide alternative solutions to the question
 - Criteria: the means to assess the options in order to make a choice



Πηγή: A. MacLean, R.M. Young, V.M.E. Bellotti & T.P. Moran, "Questions, options, and criteria: Elements of design space analysis", *Human-Computer Interaction*, 6(3-4), 1991, pp. 201-250.

Κανόνες επιχειρηματολογίας

- Scintilla of Evidence

- A position p_i is active, if at least one active position argues in favor of it

$$active(p_i) \Leftrightarrow \exists p_j (active(p_j) \wedge in_favor(p_j, p_i)).$$

- Beyond Reasonable Doubt

- A position p_i is active if there are not any active positions that speak against it

$$active(p_i) \Leftrightarrow \neg \exists p_j (active(p_j) \wedge against(p_j, p_i)).$$

- Preponderance of Evidence

- A position is active when the active positions that support it outweigh those that speak against it

Συστήματα Υποστήριξης Επιχειρηματολογίας



Major requirements

- Discourse structuring
- Discourse visualization
- Knowledge management
- Decision making
- User management

Debatepedia

Welcome to Debatepedia! - Debat... X

dbp.idebate.org/en/index.php/Welcome_to_Debatepedia

idea international debate education association

PRO DEBATEPEDIA CON

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Article Discussion View source History

Debate Digest: [Teacher-student friendships on Facebook](#), [Law school](#), [Balanced budget amendment](#), [US debt ceiling deal](#).

Welcome to Debatepedia!

Debatepedia is the Wikipedia of debates - an encyclopedia of pro and con arguments and quotes on critical issues. A project of the 501c3 non-profit International Debate Education Association (IDEA), Debatepedia utilizes the same wiki technology powering Wikipedia to centralize arguments and quotes found in editorials, op-eds, political statements, and books into comprehensive pro/con articles. This helps citizens and decision-makers better deliberate on the world's most important questions. Debatepedia is endorsed by the [National Forensic League](#).

The Debate Digest

Our latest and best pro/con articles to help you develop a position on the world's most important issues.

- **Debate: Occupy protests**

Featured pro and con arguments from this article:

- **PRO: Occupy protesters have common message to right capitalism** "Cross continents." *The Economist*. Oct 17th 2011. "they do share a common demand: someone, somewhere, should do something to right the problems of global capitalism as currently constituted. One reason why these protests are so interesting is that their targets, those cheerleaders for globalisation, capitalism and free markets, tend to agree that the system needs fixing. This makes the 'occupy' protests, as they have come to be known in the English-speaking world, hard to argue against."
- **CON: Occupy protests lack common/coherent message.** "Occupy protests need to focus on coherent demands." *Student Life Staff Editorial*. October 17th, 2011. "The protests have been linked and compared to the tea party movement, due to their similar grassroots nature and extreme ideological stances. However, the tea party does have a centralized message, which the "Occupy" protests lack. The tea party is about reducing taxes and cutting spending to make government smaller. Regardless of whether or not you agree with the tea party's stances, it is possible to know what the entire group and all of its smaller subsidiaries are about. We believe the "Occupy" protests need to do the same thing. Define and convey their message correctly, and stick to reasonable demands that resonate with the rest of the American public. Most of the country has been seriously hurt by the financial crisis, and most of the American public wants to focus on creating a more equal and fair country. There is a lot of room for the "Occupy" protests to grow, but without a consistent message, most Americans will be turned off."

Recent Debate Digest articles

- **Does Obama deserve a second term?** - October 10th, 2011.
- **UN recognition of Palestinian statehood** - September 26th, 2011.
- **American Jobs Act** - September 17th, 2011.
- **Keystone XL US-Canada oil pipeline** - September 5th, 2011.
- **Teacher-student friendships on Facebook** - September 2nd, 2011.
- **Law school** - August 29th, 2011.
- **Balanced budget amendment** - August 9th, 2011.
- **US debt ceiling deal** - August 5th, 2011.

Debates in The News

- **Climate change and clean energy portal** Probably one of Debatepedia's best resources, this portal is always timely.
- **Debate: Constitutionality of US health insurance mandates** The Obama Administration and others are pushing for a final ruling from the Supreme Court on the constitutionality of the Affordable Care Act's mandate that Americans [with some exceptions] buy private health insurance.
- **Debate: UN recognition of Palestinian statehood** is front and center in international news, as the Palestinian Authority pursues a high-profile UN vote in favor of statehood. A majority of UN member states appear to support their push. Yet, the US has promised to veto the move in the Security Council in support of its ally Israel.
- **Debate: American Jobs Act** US President Obama submitted the American Jobs Act to Congress at a critical time in the nation's economic history. Debatepedia looks at the bill and the arguments from its supporters and detractors.

More Debates in the News

Editorial News and Notes

This section features strong work done by Debatepedia editors. Consider joining their efforts. [User Guide](#).

- **New Deal created historic public works and infrastructure.** *Michael Hiltzik*. "What the new deal accomplished." *Slate*. Oct 13th, 2011. "The New Deal physically reshaped the country. To this day, Americans still rely on its works for transportation, electricity, flood control, housing, and community amenities. The output of one agency alone, the Works Progress Administration, represents a magnificent bequest to later generations. The WPA produced, among many other projects, 1,000 miles of new and rebuilt airport runways, 651,000 miles of highway, 124,000 bridges, 8,000 parks, and 18,000 playgrounds and athletic fields; some 84,000 miles of drainage pipes, 69,000 highway light standards, and 125,000 public buildings built, rebuilt, or expanded. Among the latter were 41,300 schools. The transformative power of this effort is inestimable."

See [Past editorial news and tasks](#) | Follow recent edits and updates on [Twitter](#) | See other [editing tasks](#) you can do.

Category Browser

Browse through Debatepedia's main categories to explore its contents and areas of interest to you. Go to Debatepedia's [Contents Guide](#) to see all of its categories.

- **Highest quality**
- **Featured portal: Climate change project**
- **Politics** | [Political systems](#) | [International politics](#)

- dbp.idebate.org
- A wiki encyclopedia of pro and con arguments and quotations in important public debates from around the world

Araucaria

The screenshot shows the Araucaria 3.1 application window. The title bar reads "Araucaria 3.1 - ./etc/stardust mission.aml". The menu bar includes "File", "Edit", "View", "Labels", "Schemes", "AraucariaDB", and "Help". The toolbar contains various icons for file operations and navigation. The main window is divided into two panes. The left pane contains a text editor with the following text: "Perhaps we should be even more concerned about NASA's attitude to safety than we are already. John Rummel, NASA's man in charge of our planet's safety, thinks that there is no danger in the Stardust Mission bringing material from the Wild 2 comet back to Earth because 40,000 tonnes of cometary stuff enters our atmosphere every year (10 January, p 11). I have always assumed that this material wasn't carefully packaged in a capsule designed to protect it on its journey through the atmosphere." The right pane displays an argument map with three nodes. The top node is a white box containing the text: "there is no danger in the Stardust Mission bringing material from the Wild 2 comet back to Earth". Below it are two nodes: a white box on the left containing "40,000 tonnes of cometary stuff enters our atmosphere every year" and a pink box on the right containing "this material wasn't carefully packaged in a capsule designed to protect it on its journey through the atmosphere." A dashed grey box on the far right contains the text: "The material that falls to Earth naturally is the same as the material brought back by the Stardust mission." An arrow points from the top of the two bottom nodes to the bottom of the top node. A yellow status bar at the bottom of the window displays the message "Selected item(s) deleted".

- Allows users to extract the arguments from text and represent them diagrammatically in an argument map
- Arguments are stored in Argument Markup Language (AML), which is based on XML
- Largely replaced by OVA (Online Visualization of Argument - <http://www.arg-tech.org/index.php/ova/>), a browser-based tool that supports analysis of online textual arguments

TruthMapping

The screenshot displays the TruthMapping website interface. At the top, the browser address bar shows the URL <https://www.truthmapping.com/map/1021/#s7164>. The website header includes the logo "TRUTH MAPPING 2.0 Beta" and navigation options like "MY NOTES", "Map", and "Note". The main content area features a title "Unemployment will rise as a result of technological innovation and automation." and a resolved statement: "Resolved: Accelerating advances in robotics and hardware and software technologies will cause a gradual but unavoidable increase in unemployment and lead to an economy in which most adults are unable to find paid employment."

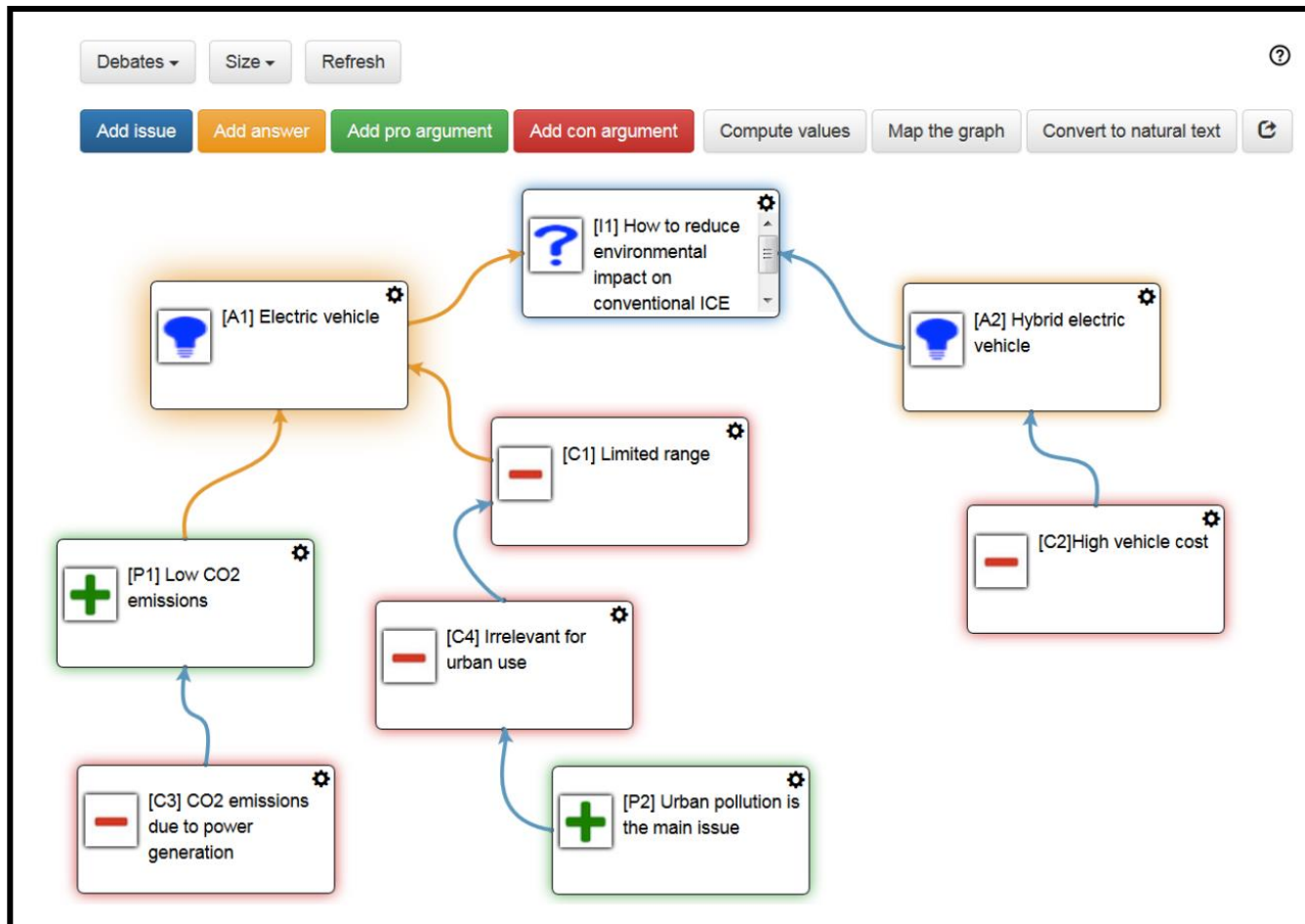
The map shows several logical elements (assumptions and conclusions) connected by arrows. An orange box highlights the "Critiques for this Conclusion" button. A detailed view of a critique is shown on the right, listing existing critiques and their rebuttals.

Critiques for this Conclusion

Existing Critiques: 1 2

Critique	Rebuttal
<p>1 Critique by Jonathan 04/08/12 07:04 ct Jonathan likelihood: 100%</p> <p>This also depends on algorithmic advances and advances in machine learning (just requires adding a new premise).</p>	<p>Rebuttal none</p>
<p>2 Critique by DanielLC 11/03/14 05:11 ct DaniellC likelihood: 100%</p> <p>That is far from obvious. The exponential increase in computing power often seems to only lead to a linear improvement.</p>	<p>Rebuttal none</p>

Arg&Dec



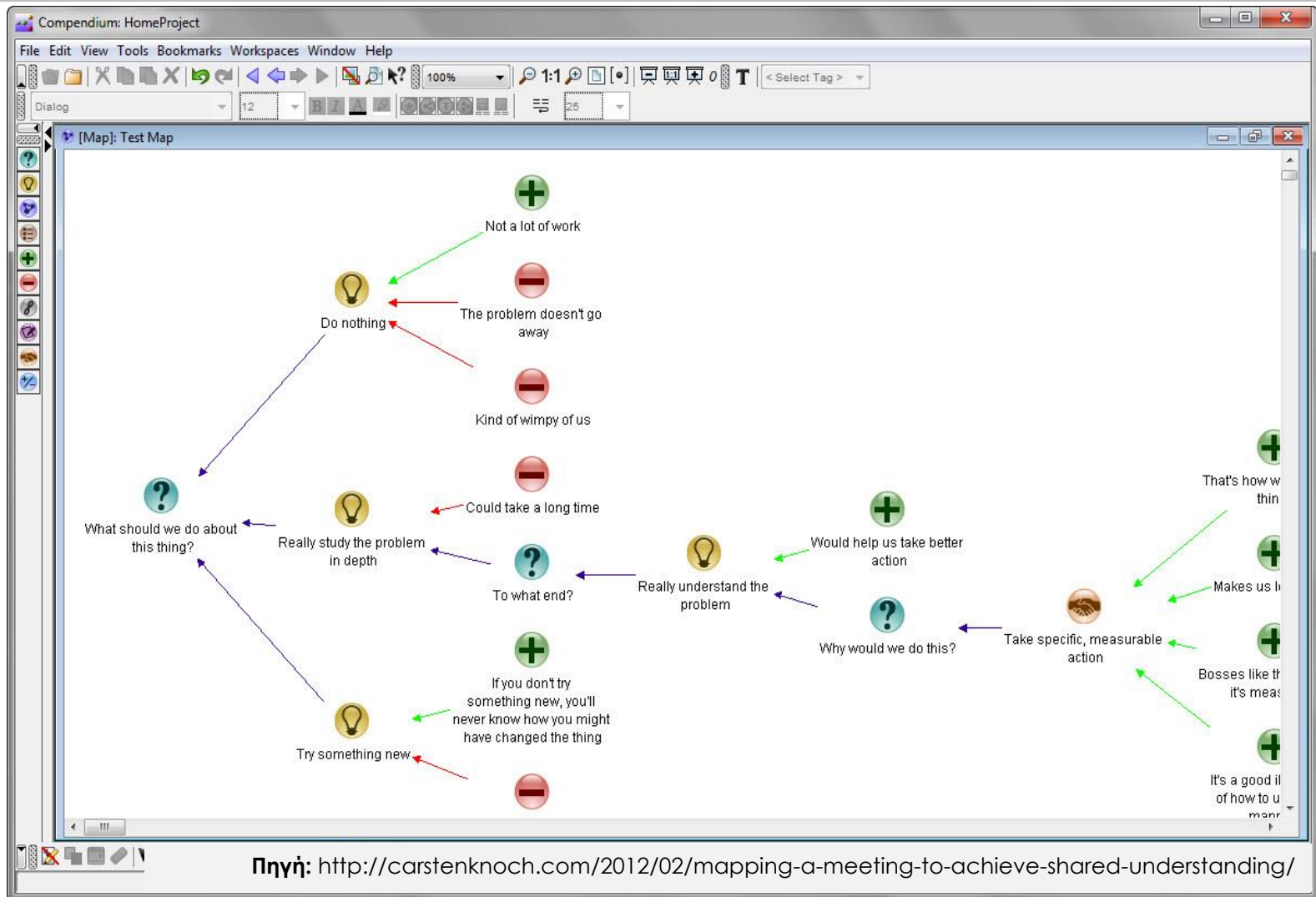
- www.arganddec.com
- It can score decisions by measuring the dialectical strength of opinions in debates and/or by using tabular methods

DebateGraph

- debategraph.org
- Helps communities of any size to externalize, visualize, question, and evaluate all of the considerations that any member thinks may be relevant to the topic at hand

The screenshot displays the DebateGraph interface for a map titled "The Global Financial Crisis". The central node of the mind map is "The Global Financial Crisis", with several related nodes: "Potential consequences of the financial crisis?", "What is the future of money?", "Long-term causes of the financial crisis?", "Immediate triggers of the financial crisis?", and "How should the US and other governments respond?". A "Related maps" node is also present. The right-hand pane shows a detailed outline of the map's content, listing various sub-topics such as "Money is created through interest bearing loans.", "Unustainable forces of production/consumption: Capitalism", "Wage increases stop matching productivity in 1970's", "Advertising consumption as the only measure of well-t", "Banks encourage borrowing to ensure continued cons", "colleges mischaracterize capitalism to support for cent", "Workers replace power in workplace with consumption", "Unintended consequences of earlier public policy choices", "Lack of financial literacy.", "Accountability Mechanisms ill-suited for Network Style Dec", "Global Savings Glut", "Human cognitive biases", "Forms of human cognitive bias", "Homebuyers saw rising house prices as natural order", "Investors underweighted systemic risk", "Lenders overconfident in their ability to manage risk", "Regulators overestimated their powers of insight and r", "Cognitive Biases are constant", "Credit-rating agencies underestimated risks", "House price bubble in the US", "Increased power of finance capital leading to rent-seeking", "Lack of financial literacy.", "Natural financial dynamics of the baby boom generation", "Background to the global financial crisis", "Global financial crisis shook the dominant economic mod", "Wage increases stop matching productivity in 1970's", "How should the US and other governments respond?", "Immediate triggers of the financial crisis?", "Potential consequences of the financial crisis?", and "What is the future of money?". The interface includes navigation controls, a search bar, and a footer with links like "Add idea", "Comment", "Move", "Cross-link", "Cite", and "New map".

Compendium



- compendiuminstitute.net
- Mapping information, ideas and arguments

CoPe_it! (1/4)

CoPe_it! - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://150.140.18.39/Workspace/init.aspx#

CoPe_it! CoPe_it! Actions Workspace Profile Help [CubaRepresentative] Exit

SecurityCouncil

Tools

New Browser

Search Google

Search Wikipedia

Search Workspaces

Quick Links

RSS Feeds

Bookmarks

Members

- ChinaRepresentativ
- PakistanRepresenta
- PapuaNewGuineaRe
- SingaporeSpeaker
- SlovakiaFAMinister
- ItalianUSecrFA
- BelgiumRepresentat
- GhanaRepresentativ
- CongoRepresentativ
- QatarRepresentative
- UnitedStatesRepres
- FranceRepresentativ
- IndonesiaRepresent

Status : Working

Done

CLIMATE CHANGE IMPACT ON...

EURepresentativeFromGermany 10/13/2007 2:10:46 PM

Conflict prevention (incor...

ItalianUSecrFA 10/12/2007 9:54:54 PM

territorial changes might I...

BritishForeignSecretary 10/12/2007 6:39:43 PM

Climate change is a second...

QatarRepresentative 10/12/2007 8:34:19 PM

Kyoto policy failed

Overlooking the subject of ...

GhanaRepresentative 10/12/2007 7:51:42 PM

Deadly competition over res...

ChinaRepresentative 10/12/2007 9:02:43 PM

Essentially, it is an issue...

dora 10/15/2007 5:55:19 PM

Structure & voting of the U...

SecretaryGeneral 10/12/2007 9:22:48 PM

Environmental degradation h...

dora 10/12/2007 7:43:46 PM

KYOTO Protocol: United Nati...

RussiaFedRepresentative 10/15/2007 7:05:08 PM

SC should only deal with is...

EURepresentativeFromGermany 10/13/2007 2:14:33 PM

Clear evidence of man-made ...

dora 10/13/2007 2:18:24 PM

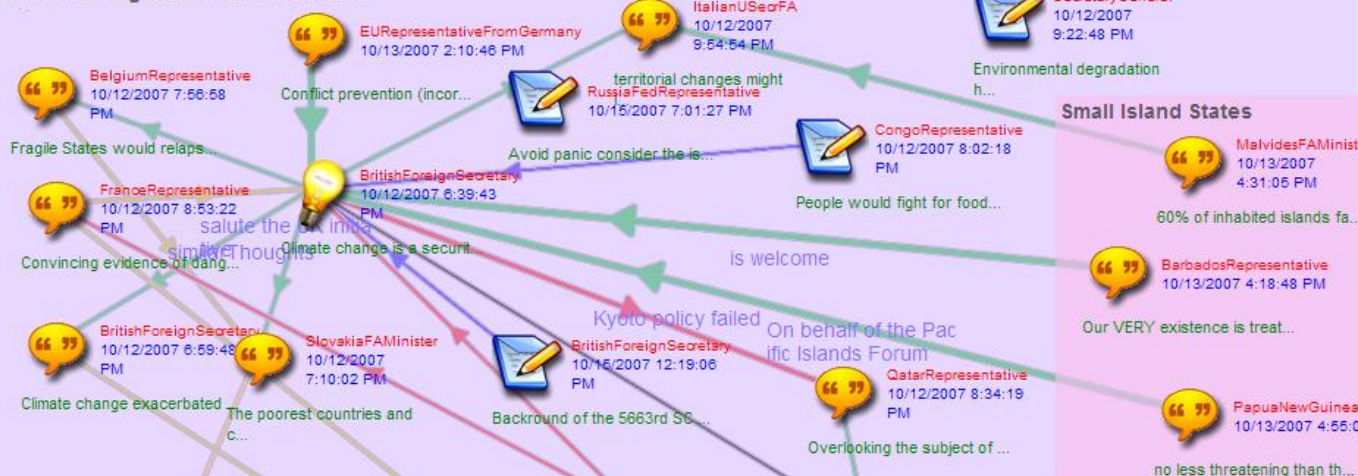
Global Warming, EU

Mini Map

CLIMATE CHANGE IMPACT ON...

SecurityCouncil

Climate change is a SECURITY ISSUE



Protocols & Facts

Montreal Protocol on Substa...

KYOTO Protocol: United Nati...

CO2 emissions at EU countri...

China CO2 Emissions outrun US

...is an issue of SUSTAINABLE DEVELOPMENT



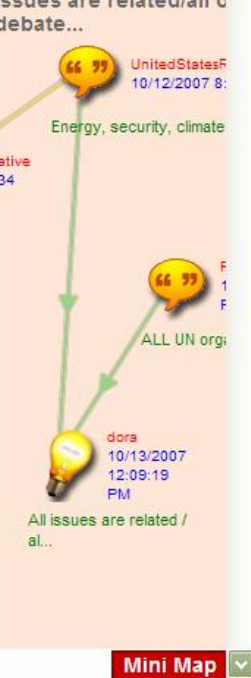
Position of Non-Aligned Movement



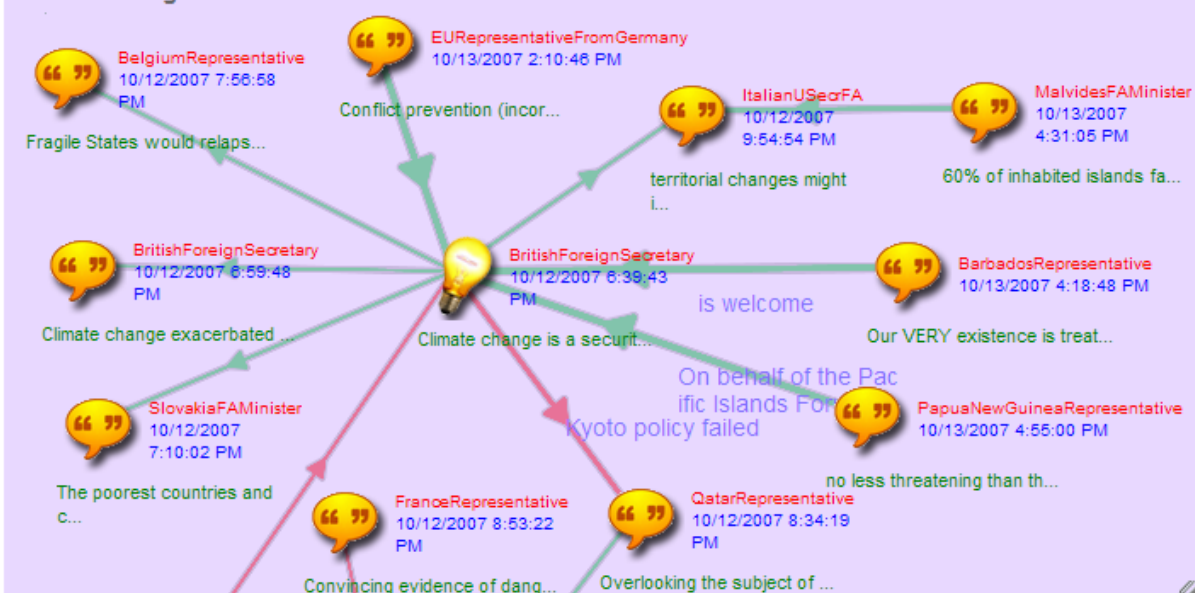
African Countries



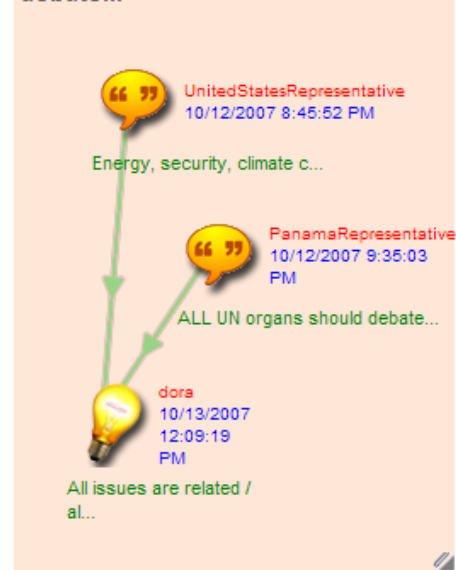
Issues are related/all o debate...



Climate change is a SECURITY ISSUE



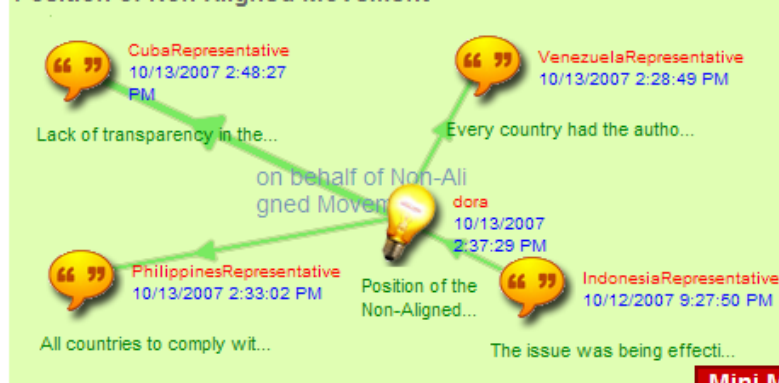
Issues are related/all organs debate...



...is an issue of SUSTAINABLE DEVELOPMENT



Position of Non-Aligned Movement





- CLIMATE CHANGE IMPACT ON PEACE & SECURITY :: *BritishForeignSecretary*
- Climate change is a security issue, thus it concerns Security Council :: *BritishForeignSecretary*
- Climate change exacerbated THREATS, including conflict and access to energy and f... :: *BritishForeignSecretary*
- The poorest countries and certain regions are at particular risk :: *SlovakiaFAMinister*
- Fragile States would relapse into conflict or civil war :: *BelgiumRepresentative*
- Overlooking the subject of development led to failures- the Council is not the o... :: *QatarRepresentative*
- Security Council did not have expertise, does not allow extensive participation i... :: *ChinaRepresentative*
- territorial changes might impinge on disputes over borders or the division of mar... :: *ItalianUSecrFA*
- 60% of inhabited islands face coastal erosion :: *MaldivesFAMinister*
- Conflict prevention (incorporated in Resolution 1625) is clearly linked with cli... :: *EURepresentativeFromGermany*
- Our VERY existence is treated by sea-level rise, hurricanes & floods vs. negligib... :: *BarbadosRepresentative*
- no less threatening than the dangers guns and bombs posed to large nations :: *PapuaNewGuineaRepresentative*
- Essentially, it is an issue of Sustainable DEVELOPMENT not of Security. No role o... :: *ChinaRepresentative*
- Convincing evidence of dangers - Poverty & environmental degradation are not isol... :: *FranceRepresentative*
- There is a need for urgent response; the SC is well placed to raise awareness :: *CongoRepresentative*
- SC should only deal with issues directly under its mandate! :: *RussiaFedRepresentative*
- The mandate of the Council did not deal with such matters :: *SouthAfricaRepresentative*
- All issues are related / all UN organs can debate :: *dora*
- Energy, security, climate change and sustainable development were fundamentally l... :: *UnitedStatesRepresentative*
- ALL UN organs should debate impacts of climate change, according to their mandate... :: *PanamaRepresentative*
- Position of the Non-Aligned Movement :: *dora*
- The issue was being effectively addressed in other fora, although we could agree ... :: *IndonesiaRepresentative*
- Every country had the authority to decide on / Interference by the Council could... :: *VenezuelaRepresentative*
- All countries to comply with their legally binding obligations under the Conventi... :: *PhilippinesRepresentative*
- Lack of transparency in the work of the Security Council. UN Member States to fu... :: *CubaRepresentative*

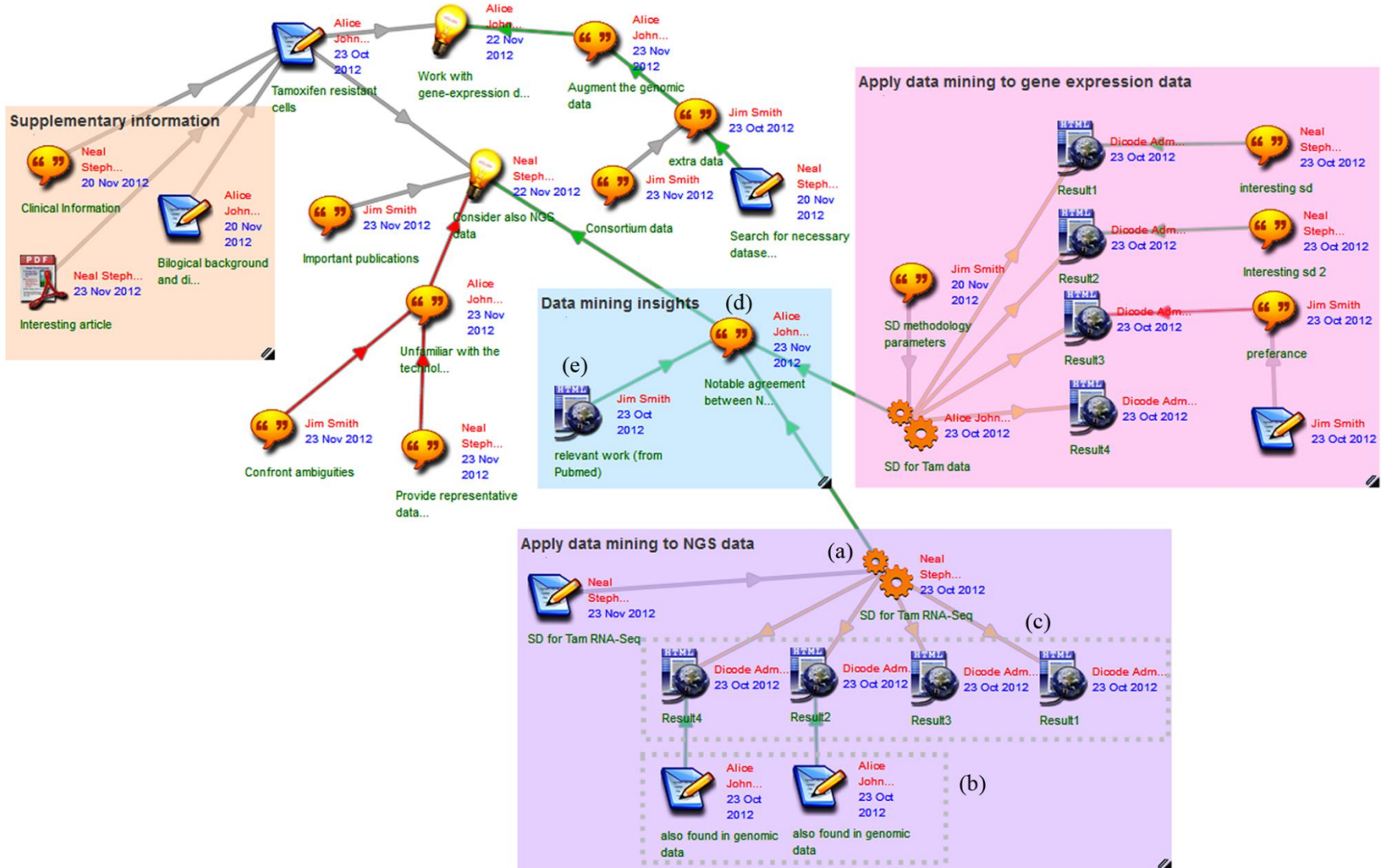
There is a need for urgen

Add Position

Add Preference

Integrating web services in Dicode

Active Workspace: Comparative NGS vs Gene Expression Tamoxifen data



Cohere

The screenshot displays the Cohere web application interface. At the top left is the logo "cohere" with the tagline ">>> make the connection". To the right are navigation links for "About" and "Contact", and a header "An OpenLearn Tool from the OSC Project". A login section includes fields for "Login" and "Password", with buttons for "Login", "Register", "Login as guest", and "Forgotten it...". Below this is a search bar with the text "Search for this phrase in connected Ideas" and a "GO" button. The main content area is divided into three columns: "People", "Ideas", and "Connections".

People
Most: [Recent](#) Prolific Relevant
List of users with profile icons and timestamps:

- Dana Xan (11 January 2008, 14:19)
- Harry Kaloudis (11 January 2008, 8:47)
- John Ingleby (10 January 2008, 18:51)
- Anne Smith-Stolberg (10 January 2008, 13:28)
- Stuart Myles (09 January 2008, 21:51)
- Carolyn Cusack (09 January 2008, 17:35)
- Nadia Spang Bovey (09 January 2008, 16:56)
- Stuart Barron (09 January 2008, 14:14)
- Jane Raftery (09 January 2008, 10:49)
- Alison Smith (09 January 2008, 10:22)

Ideas
All: [Recent](#) Popular Connected
My: Recent Popular Connected
List of ideas with timestamps and titles:

- Idea: 10 January 2008, 17:17 - Media Literacy
- Idea: 09 January 2008, 22:04 - Media Literacy
- Idea: 08 January 2008, 23:20 - Course Objective
- Idea: 08 January 2008, 23:14 - Philosophy
- Idea: 08 January 2008, 18:29 - Attitudes about Change

Connections
All: [Recent Connections](#)
My: Recent Connections Relevant Connections
Diagram showing connections between ideas:

- "Media Literacy" (Concept) **helps to promote** "Information literacy" (Idea).
- "Provide views of the threaded discussion that support and enforce an issue-based (question-based) structure." (Idea) **responds to** "In a contentious domain ('Causes of global warming'), how can threaded-discussions help us to navigate competing views and arguments?" (Question).
- "How can choreographic knowledge and sensibility help to shape e-Science practice to make its applications more usable within the field of performance arts practice-led research as well as the broader Arts and Humanities context?" (Research Question) **is the rationale for** "e-Dance Project" (Idea).

- cohere.open.ac.uk
- Introduced not as an argumentation tool, but as a tool for making meaningful connections between ideas (argumentation is just one possible application that some users may want to pursue)

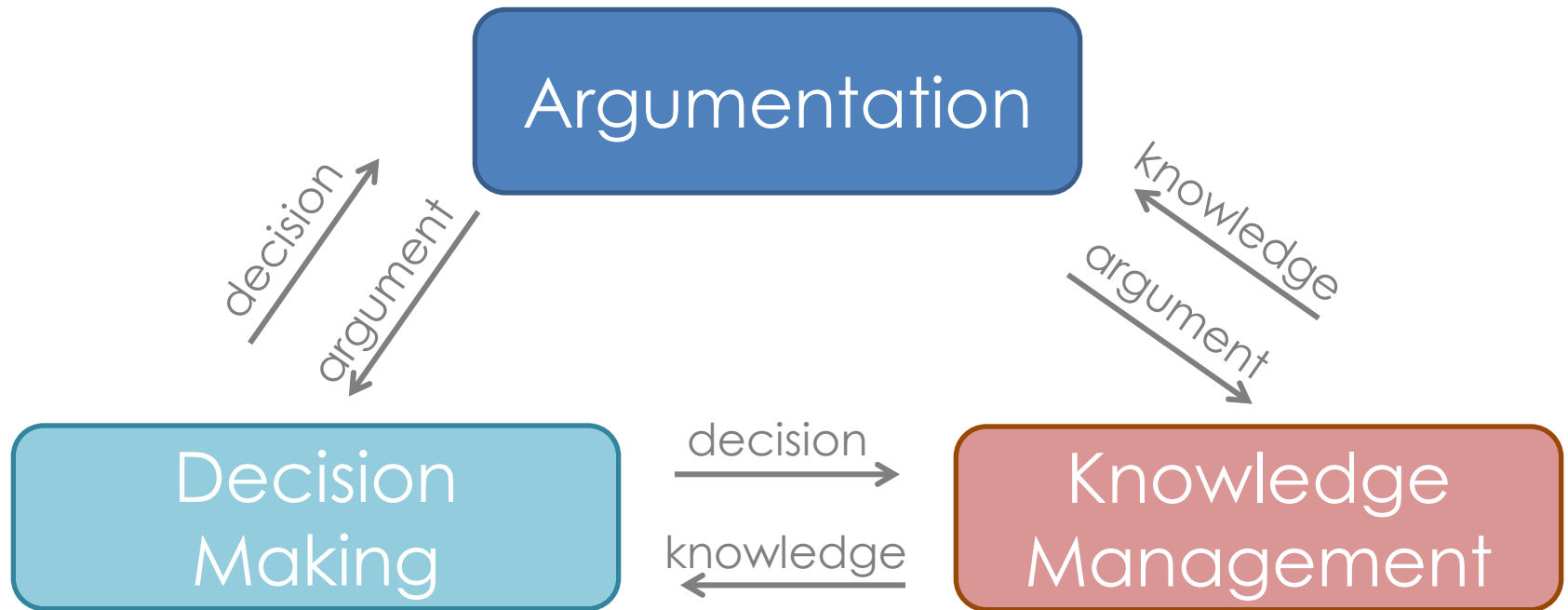
Προκλήσεις



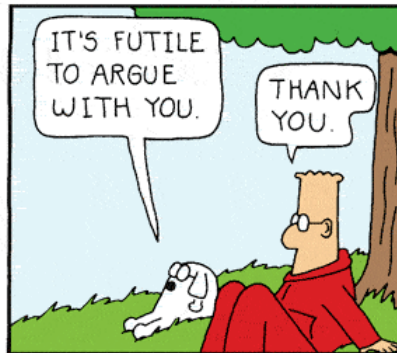
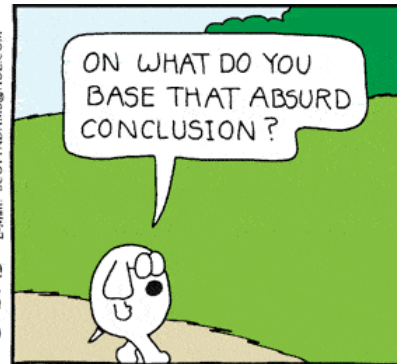
Research directions

- Οπτική αναπαράσταση (visualization)
- Αιτιολόγηση (reasoning)
 - Argumentation rules
 - Decision making models
 - Scoring mechanisms
- Exploitation of Web 2.0 features and technologies
- Argument mining
- Open platform
 - Open data, linked data, ...
 - Mashup possibilities (e.g. arguments within GIS)
 - User-own argumentation schemas and reasoning models

Argumentation, KM and DM



ΑΝΤΙ ΕΠΙΛΟΓΟΥ



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