
Document 10.1.3.

Complementary Knowledge Analysis / Mapping Process

This paper was prepared by Anthony Judge and Nadia McLaren of the UIA as a proposal for Dropping Knowledge Event (Berlin, 9 September 2006). The on-line version of this paper can be found at <http://www.laetusinpraesens.org/docs00s/dropknow.php>. For illustrations related to this discussion, see document 10.1.4. in this volume.

Context

The following proposal is framed as complementary to the processes of the event in which 112 people (the “free voices”), seated in a circle, will respond individually to 100 questions. As currently envisaged by **dropping knowledge**, individuals will be simultaneously filmed (individually) and their comments will be (individually) recorded for dissemination, storage and subsequent transcription – potentially using webcasting and other techniques. The event as a whole will also be filmed. The results will also be reproduced and edited in a variety of ways for subsequent distribution

Proposal

The following proposal seeks to make use of the **output audio feed** from each “free voice” – their answer to the questions – and to structure the concepts therein on-the-fly into a variety of knowledge maps of different styles. The maps would be made available, as they develop, to those at the event in Berlin (whether individually or collectively) and elsewhere.

Although **not** the focus of this proposal, it is recommended that consideration be given to:

- real-time transcription techniques – computer aided transcription (“CAT”) technology to deliver **text** to computer screens within a few seconds of the words being spoken – notably as used at ICANN meetings. **This facility could facilitate the task of concept analysis.**
- learnings from a process in which each participant formulated a single question for consideration by the others, enabling the pattern of relationships between the question themes and the participants to be analyzed and visualized (see *Metaconferencing: Discovering people / viewpoint networks in conferences*, on the initiative of Stafford Beer and Gordon Pask, on the occasion of a conference on *Improving the Human Condition: Quality and Stability in Social Systems* of the Society for General Systems Research (SGSR))

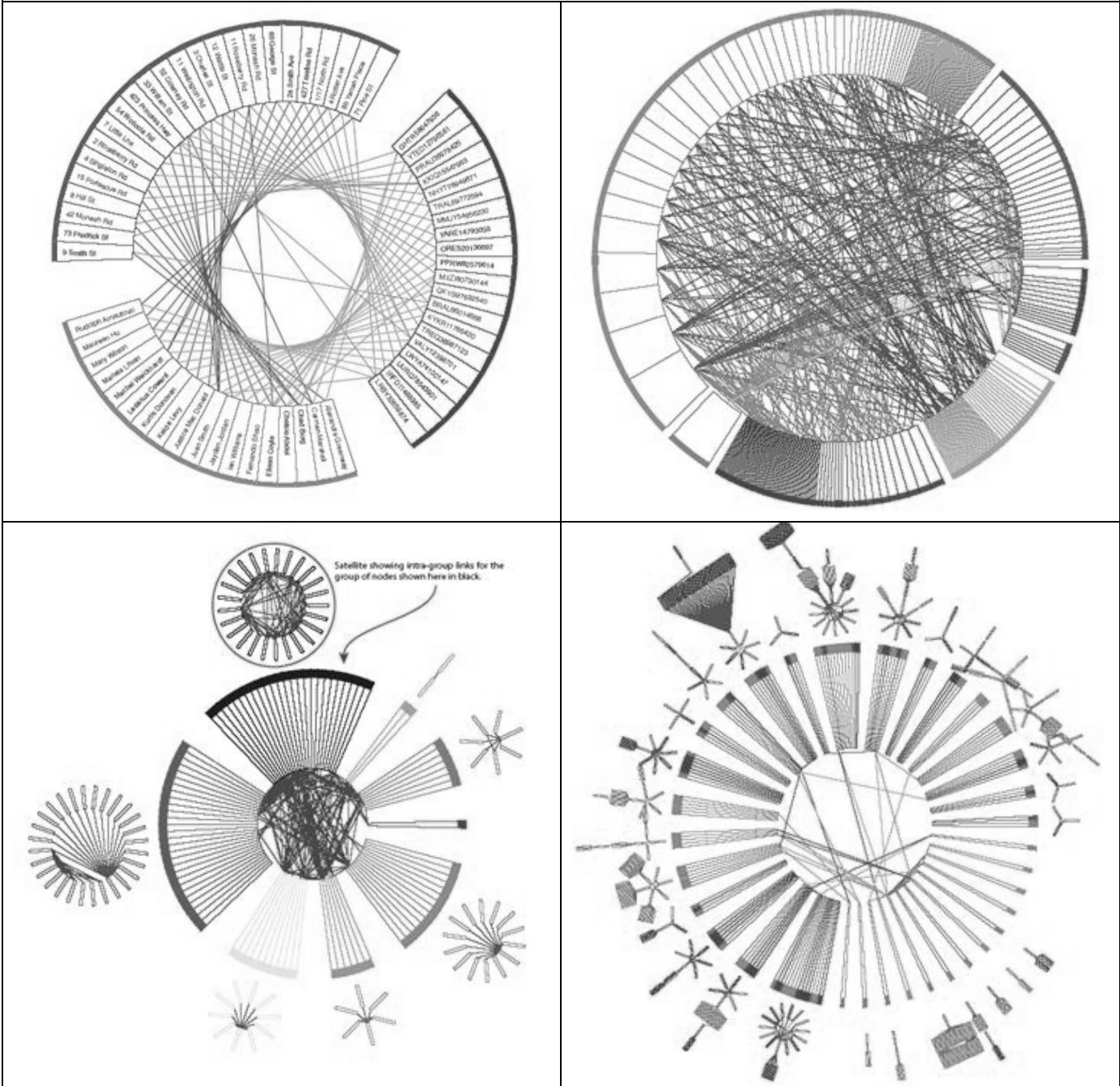
Process

- **Concept analysis:** Output audio feed of each “free voice” is fed to a “concept analyzer”, namely:
 - one or more individuals (ie an analyzer team for each free voice, as is done for consecutive interpretation).
 - concept analyzer will have skills analogous to those of a minute writer, exemplified by the conceptual skills used in mind mapping on-the-fly

- the concept analyzer
 - isolates concepts enunciated by the speaker, types them into a simple form in which they are sequentially numbered
 - makes links between the concepts by referring to them by number (this could be done by a second member of the team)
- concept analyzer will not need to be in Berlin, but the work will preferably need to be done real time (and preferably not delayed for the text transcription)
- the form is periodically saved

- **Mind / Concept mapping:** The analyzed text is sent as a formatted text feed to mind-map / concept map makers (note the distinction between these techniques):
 - there are various possibilities for the transfer of the concept-analyzed relational text
 - analyzed feeds from **all 112** could be transferred to the **complete set** of mind-map specialists such that every feed was reformatted/visualized in every mind map
 - analyzed feeds from **some of the 112** could go to **all mind map specialists**
 - analyzed feeds could go to **selections of mind-map specialists**
 - analyzed feeds, for a **given theme or cluster of themes**, could go to mind map specialists
 - even **more selective processes** could be envisaged
 - mind map makers could:
 - self-select as specialists in the use of particular packages or
 - be subsidized/appointed by manufacturers of the packages – encouraged to collaborate by the visibility offered to their products
 - the analyzed feed could also be provided to other interested parties willing to process some or all the output in mind map packages of their preference
 - for their personal interest (possibly for a fee)
 - for submission back to dropping knowledge as their own best representation of the event
 - an alternative to the use of computer-aided packages is free-form mind-mapping by people with artistic talents
 - another alternative is the use of 3D mind-mapping involving the use of virtual reality techniques, integrating video clips into the virtual world (cf Mind Scene)

**Example: Progressive Analysis and Visualization of Table of “Free Voices”
using *NetMap*¹ to relate and cluster issues and/or people, highlighting subgroups**



¹ See document 10.1.4. in this volume.

NB: Mind mapping packages that can import a formatted feed and self-organize visually (with limited need for manual tweaking) would have an advantage – notably in terms of cost, time and expertise required. In practice a distinction may be made between mind mapping (based on radial hierarchical and tree structure representation), concept mapping (knowledge mapping) that is not restricted to radial/hierarchical representation), and network visualization (which is the generic graph mapping technique underlying both). For commercial reasons, some less restrictive concept mapping packages are marketed as mind mapping packages.

- **Harmonizers:** Depending on resources, a higher level of editing and integration could be allocated to specialists in terminology and language, possibly aided by text analysis / summarization packages (see below).

Text phrases versus Concepts: Concern might be expressed as to whether what are isolated by the analyzers as concepts are in fact concepts or more to be understood as phrases that do not merit distinction as “concepts”. Of particular concern is the consequence of merging the analyzed feeds from different analyzers (with different styles and preferences) to create a common global map. Another concern is whether related concepts can be appropriately associated. It is possible that the text could be automatically processed to provide an additional set of “background” implicit relations based on use of common terms. Facilities could be offered to merge or separate concepts possibly to be understood as duplicates in this way.

- **Global map of all voices:** For those packages (such as *NetMap*) adapted to handling the large quantity of information envisaged, all the analyzed feeds could be merged (suitably distinguished by code) into a single feed:
 - to provide a global map of the implicit conceptual relationships
 - between all the participants for all themes/questions together
 - between all the participants for some themes/questions together
 - again this could be done real-time – but remotely if convenient
 - results could be fed back to Berlin in real time to give visual feedback on the interrelationship between the 100 themes dealt with by the 112 as time evolved
 - the global visualization could also be disseminated (webcast) as well as being incorporated into any video record – also as a speeded up time-frame sequence

Issues

- **Logistics:** The proposal is based on using an audio feed as effectively as possible – are the logistics too complex? Here are some further considerations:
 - where there are resources to analyze 112 free voice feeds, concept analysis can be done professionally, but it could also be done as an exercise by students in communication schools – or both
 - if deadlines for some are not respected, then the results are simply delayed for those cases

- a similar attitude applies to input into mind maps and any tweaking considered desirable
- basically the philosophy is extremely pragmatic-- if and where it works this is fine, but if it does not, it will simply not be done real time, or it will be subject to (later) revision

- **Comprehensibility preferences:** It is clear that different people have different preferences for different modes of communication. This applies as much to voice vs image as to different styles of voice or different styles of image. Such preferences also apply to different styles of mind map.
 - it is not expected that all mind maps from all 112 will be of equal interest to all who are interested in the event (including those questioned) – but there is the opportunity to have the “best maps” selected by a jury and given greater publicity
 - some maps of some of the 112 will be of special interest – notably to those questioned
 - merged maps of all participants for some thematic clusters only may be of interest, especially as the 112 complete their responses to thematic clusters (and can be grouped)
 - ideally users would be able to switch between mind maps, much as they switch between TV channels. This might even apply to the 112 who individually might choose to switch between mind map representations (on laptops) of their individual responses (much as people at multilingual events can switch between language channels)
 - some may have no interest in mind map representations at all – or may prefer to have them recorded or printed (as posters) for later examination, as mementos or gifts
- **Funding:** The main cost is associated with the concept analysis – if it is not done as an exercise by communication students. This could be subsidized or associated with revenue generated by the maps, or by subsidies from the mind map package manufacturers. As an experiment in new approaches to concept capture and organization at meetings, it is possible that EU meeting support funding could be available (though time is short)
- **Languages:** Assuming the 112 will not necessarily be responding in English, and the responses cannot necessarily be translated into all the languages desired, the construction of mind maps offers a form of common visual language through which patterns of relationship between concepts can be compared

Resources

For resources on mind mapping, concept mapping, network visualization, text analysis, and theme abstracting see <http://www.laetusinpraesens.org/docs00s/dropknow.php>.

Annex: Press release “Enabling a Living Library”

Prepared by the UIA on the occasion of the Dropping Knowledge Event -- Table of Free Voices (Berlin, 9 September 2006)

Living knowledge is created by living people – for all people, all over the world, all over the web. Forget data streams and information overload. Living knowledge is the "compost heap" through which knowledge is recycled to fertilize world wisdom.

Centennial achievement

As a culmination of a century of work collecting and organizing insights from thousands of interlinked international organizations, the Union of International Associations (UIA) has now enabled construction of a Living Library. The UIA's knowledge structure provides a natural system through which questions posed by people can be interrelated.

Founded in Brussels in 1907, the UIA is an information clearinghouse for all international associations – currently more than 50,000. Over decades UIA has built up interwoven profiles of over one hundred thousand global problems and solutions, initially in collaboration with the futures research foundation Mankind 2000, inspired by Robert Jungk.

The Living Library is being launched as a major media event by Dropping Knowledge in Berlin on 9 September 2006. The powerful symbol of its circular Table of Free Voices, 112 people of wisdom, is a perfect metaphor of the challenge the world faces with thousands of international associations of people separately endeavouring to respond to the same set of questions. All are challenged by the need for an enabling synthesis for action.

Knowledge ecology

The unique work of the UIA focuses on relationships between organizations, their strategies in response to perceived concerns, and the values through which these are understood. Since the emergence of the web, the UIA has been enabling web users to generate and manipulate maps of these networks – visualizing the living ecology of human preoccupations.

UIA's original approach derives from its web databases through which are generated the Encyclopedia of World

Problems and Human Potential and the Yearbook of International Organizations (under a special UN resolution). These are distributed worldwide by the Munich-based reference publisher, K G Saur Verlag (recently acquired by the Berlin-based group Walter de Gruyter, the largest humanities publisher in continental Europe).

Mapping knowledge

In the light of UIA's knowledge mapping expertise, it has been possible for Dropping Knowledge to provide interactive network maps as a means of access to the Living Library content.

In constructing the Living Library, Dropping Knowledge – through its partner the German Research Center for Artificial Intelligence (DFKI) – used this long-term intellectual investment of the UIA, to adapt UIA's knowledge patterning schema (technically called an ontology). This allows relationships between different questions, asked over the web, to be established automatically in order to associate them with answers and images stored in the Living Library database.

Learning pathways

Separately in its research, the UIA has used the items in its databases to generate over one million interrelated questions as the basis for a learning experiment. (See document 10.1.1. in this volume.) This enables users to follow learning pathways between organizations, problems, strategies and values – a vast network of learning pathways. Together these call for imaginative configuration to make evident the highways of wisdom – the "songlines" of the noosphere in Aboriginal terms. (See document 10.2.2. in this volume.) The UIA is testing an Australian mapping software, NetMap (see document 10.1.4. in this volume), capable of detecting patterns in millions of relationships – and portraying them together in a circular format analogous to that of the Table of Free Voices. It may then be possible to represent them by sound or music to elicit harmonies capable of enabling new forms of action.