

Notes from Session 6

General/Theory II

There were the following comments in the plenary discussion of the second and last session on General/Theory:

- Dr. Taylor – Prof. Bjørke has carried out his procedure for road networks, but it is very general. One of the problems with VITA is scaling – being able to drill down and zoom out. Could Prof. Bjørke's techniques be applicable to solving the larger scaling problem?
- Prof. Bjørke – information theory could be applicable to the scaling problem in VITA but the VITA display is not quite like the networks we have been viewing so far. It is not obvious how to apply it. Information theory introduces probabilities, one that measures variation, and one that measures confusion. It makes sense to apply it but how to do it is the question.
- Dr. Jacobson – we need to phrase the question the right way (in information theoretic terms)?
- Prof. Bjørke – I want to show as many nodes as possible, without confusing...so give me the picture with as many nodes as possible but not so many as to confuse me...this is the channel capacity.
- Dr. Kamp – The central question is what are you going to do with that network? We need to show displays to the users to ask which is best for them.
- Dr. Hall - Sonar analysts use not only the visual bit-stream but their audio capability to interpret the image so one can conceive of a multidimensional display that is user configurable.
- Dr. Jacobson – VITA can show dozens of concepts, many relationships between the concepts and hundreds of hits as a typical complex display
- Dr. Nixon – when you use narrative, it can be a great way to show relative details but it can lead you off track and mis-inform (like a fiction).
- Dr. Hall – memory is re-constructed, not retrieved. So one thing they have tried has been comparison of alternative explanations...story based reasoning.
- Mr. Zeltzer – how can you build a system to help you match our story to the data?
- Dr. Hall - We have been looking at curmudgeon agents that try to keep you away from confirmation bias by being biased themselves in various direction. Humans are poor at recognizing negative information (see trigram experiments). Typically it takes 30-40 examples of a hidden rule if it is there, but a subject will not discover a rule relating to absence.
- Dr. Lem – we should look to other disciplines for other and possibly better representations of information.
- ?? – Doctors are good at looking at lack of symptoms to make a diagnosis. It is important to take account of "negative evidence" - i.e. what isn't there which might be expected.
- Dr. Kamp – many analysts may object to having an agent interacting with them. Dave Hall notes that many experienced analysts believe there is nothing that can be done to help them – that it takes experience to be a good analyst, not tools. Perhaps the best way to help is to advise on the top 100 things or so for them to look at.
- ?? - There are thousands of tools available, but will the analyst be willing to use them? Storyboarding could help.

- Dr. Taylor – if you are an expert analyst, you may require a longer learning curve (as you have spent a long time doing it another way); whereas a newer analyst will have less of learning curve.
- Mr. Taylor – the more one works on a task, the less you are likely to want to change how you do it. You are afraid to attempt improvement for fear of the risk that it may set you back.
- Dr. Lem – do you put the technology first or do you put the analyst first? You need to put forth something familiar but which improves on the previous state. There are limits to what the human body can do and can stand – keep this in mind
- ?? - Be careful to listen to the operator in terms of what he is used to using. BUT it is dangerous to always fit the user's current way of doing it...offer one view that fits the old display, and one that fits a new way and let them transition in their own time.
- Dr. Varga – technology integration works best when the developer becomes one of them during the creation process. It is important to understand the culture of the client if you want to introduce new technology.
- Mr. Zeltzer – our video and cinema languages have changed. What was avant guard cinema 25 years ago is now standard.