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CYBERNETICS AND SYSTEMS ON THE WEB

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The nature of belief and the contribution of mathematics

Alex M. Andrew

Reading University, Reading, UK

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Abstract *A recent discussion in the CYBCOM list is reviewed, with implications for epistemology, the nature of belief and explanation, and the contribution of mathematics. A useful item of free software is discussed, with its associated classification as make-my-day-ware.*

Mind stirring

Many important topics in cybernetics receive attention in the CYBCOM discussion list, administered from George Washington University and associated with the American Society for Cybernetics. Archives, and a link to the means of joining the list, can be found at: <http://hermes.circ.gwu.edu/archives/cybcom.html>.

From time to time a contribution to the list evokes an episode of lively discussion, and one such occurred during October and early November 2003, was apparently initiated by an input entitled: "It's meant to stir your mind", on 16:10:03. The writer of this made great claims for the power of faith in the teachings of a particular religious sect. In a curious mixture of piety and materialism, the stories were told of three individuals who achieved success because of their religious beliefs, two of them in solving problems in engineering although they did not have appropriate training, and the other in turning round the fortunes of a struggling ballet company. The implication was that cyberneticians were failing to take account of an important factor.

From this unlikely beginning a voluminous discussion arose, with eventually about 70 items carrying the same heading of: "It's meant to stir your mind". The challenge of distinguishing religion from science produced a lively debate on the nature of belief systems in general, including the observation that a workable system must be subject to constraints such as the need to recognise gravity. At the same time reference was made to the extreme "constructivist" view suggesting that a person is free to construct a reality without gravity if he wishes so, though he is unlikely to survive if the construction is put to test from a high building.

The distinction between the Newtonian view of gravity and the relativistic alternative was mentioned, but not felt to be specially important. More important was the observation by Klaus Krippendorff that: "Gravity is not a



description of anything; you can't photograph it, you can't touch it, but you can talk about it as you do. It resides in language (the language of physics) to start, and participates as such in explanations of the measured movement of bodies relative to each other".

The general principle was accepted by Lou Kauffman, but with the further observation that the "measured movement", say of a ball dropped from the leaning tower of Pisa, involves introduction of other explanatory constructs besides gravity. The arguments defending the introduction of gravity are acknowledged to be circular, but with the encouraging suggestion that it may be: "hopefully an eigen form of some use or interest to participants".

Numbers are argued to have a similar artificial significance, and a summing-up by Loet Leydesdorff makes the claim: "It seems to me that words like 'prime numbers' or 'gravity' can only have an existence within a paradigm-like language game, i.e. one that is not naturally given in common language, but that has to be learned in an acculturation process". However, a comforting insistence on contact with a real world is given in a further comment from Lou Kauffman where he says: "Yes, we all have beliefs. When I say that one does not need beliefs I guess I am really saying that all beliefs can be questioned and that many of them turn out to be quite different or even more mysterious when examined".

The discussion goes on to consider the relationship between mathematical formalism and everyday communication, with appreciation of Spencer-Brown's *Laws of Form* as usefully bridging the gap. The comment is made that formalism robs a message of its human, emotive character, but Lou Kauffman counters this by painting an almost bacchanalian picture of how mathematicians, undeterred by formalism because of their training, discuss their subject when they get together. It is suggested that the dry formalism may underlie a colourful emotional presentation in something the same way as musical notation, unattractive in itself, may be the basis of a sparkling rendition. The analogy should not be taken too far, since printed music has no value except as the basis of possible performance whereas mathematical notation can speak more directly. The discussion on many fundamental and mind-stirring issues was well removed from the topic of the initiating message.

Enhancing the clipboard

One function of the Internet newsletters (Tourbus, Langalist, Neat Net Tricks), as well as of various printed journals, is to review and evaluate the available software. Software of particular cybernetic interest is reviewed elsewhere in *Kybernetes*. In the newsletters there is particular interest in low-cost and free software, and a remarkable amount of good and useful material is available for free downloading.

No attempt will be made here to compete with the newsletters and journals in reviewing general software, but one free item seems worthy of notice as

being extremely useful as well as simple and quick to download and install. It is, in fact, easy to feel surprised that it has been so long in coming.

The “clipboard” is a familiar feature of Windows and other operating systems, where an item (usually text, but with other possibilities including pictures) is held in temporary storage in response to the command “copy” or “cut”, and can then be “pasted” somewhere else, often into a document processed by a different application from the one from which the item was taken.

The restriction to passing one item at a time via the clipboard can be irritating, for example, in taking several items from Web sites or e-mail messages to paste into an emerging *Internet Commentary*. A piece of software that allows the transfer of multiple items is available for free download, with name “Yankee Clipper” and available at: www.yankee-clipper.net.

With the software installed, but not activated following start-up, the clipboard operates in its original single-item way. However, once the software has been activated, the clipboard becomes effectively a stack and each operation of “copy” or “cut” adds its item to the top of the stack, and the “paste” operation then allows the selection of the desired item.

The Mark III version of the software, which I downloaded some months back, allows transfer of text and is extremely useful. A Mark IV version is currently offered, and the items that can be transferred include, text in different formats, pictures, and URLs or web addresses recognised as such. There is no limit to the lengths of text clips, and a number of separate stacks for items of different kinds each allow a depth of stacking of 200.

Make-my-day-ware

The software is offered completely free, even without an agreement to treat it as an evaluation or limited-time copy, and without advertising except the mention of charities that are supported. It all seems to be a matter of sheer goodwill that is a welcome contrast to the viruses and scams that have become features of the Internet.

It is suggested on the Web site that the software should not be seen as totally free, in that beneficiaries should try to send to the originators some interesting or amusing account of a special interest. The originators have coined the pleasant phrase make-my-day-ware to designate this particular kind of freeware.