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Towards a Compatibilist Understanding of the Relationship Between Data and Human Activity in Soft Systems Approaches to Information Systems Development

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Introduction

It has been argued that it is desirable to utilise *Soft Systems Approaches* to help develop computer-based information systems. However, a philosophical problem may need to be resolved before such an approach can be made intellectually defensible. This problem concerns the philosophical understanding of *free-will* (and "human activity") embodied in Soft Systems Methodology (SSM), as characterised by Checkland (1981); Checkland and Scholes (1990).

Free-Will, Determinism And Information Systems Development

Although there is little tangible evidence to suggest that the advocates of structured approaches to IS development subscribe to the philosophical thesis of determinism, they do seem to subscribe to a philosophy of "bounded" or restricted human freedom. For example, assume a physical Data Flow Diagram (DFD) for an existing system is placed in front of an information systems (IS) designer. It has processes such as "calculate net pay" on it (assume that this is currently done manually). It would be reasonable for that IS designer to conclude that some person(s) calculates net pay in the way indicated on the DFD, i.e. that some organized human activity follows this regular pattern. So, the advocates of structured approaches assume that the actor(s) would calculate the net pay in the way suggested on the DFD; it also seems reasonable to conjecture that they believe that there are sufficient concrete instruments of power in organizations to ensure that most recalcitrant actors do the things that management wish them to do most of the time, and (e.g.) Foucault (1977) provides an interesting analysis of how such "micro-power" might actually function. In fact, there may be an intertwining relationship between the use of structured approaches - with their end-results being systems which tend to enforce "regularly patterned" activities, and the methodologically deterministic assumptions often embodied in such approaches:

The trouble with modern theories of behavioursim is not that they are actually wrong but that they could become true, that they are actually the best possible conceptualization of certain obvious trends in modern society. (Arendt, 1958, p. 322).

Such trends are clearly what the advocates of Soft Systems Approaches to IS development are trying to avoid. SSM has been proposed as a basis upon which to proceed with information systems developments (Lewis, 1994). According to many SSM advocates, data manipulation is something machines can do; meaning attribution is "uniquely human", and SSM is a methodology which can help us to understand the activities taking place in the world of human "meaning attribution". SSM advocates believe that if an accommodation between various people's "meaning attributions" can be achieved *and* a suitable data manipulation (processing) system can be constructed *then, and only then*, might we have an adequate information system. It should be noted that SSM-type conceptual models are generally only claimed to be items which "might be relevant" to "making sense of" human activities - i.e. the meanings people supposedly attribute to their actions. On this view a conceptual model is only a model which might be relevant to informing someone as to the data that needs to be manipulated:

Data with attributed meaning in context we may define as 'information'. It seems most appropriate to assume that the purpose of creating an organized IS is to serve real-world action. Organized provision of information in organisations is always linkable in principle to action: to deciding to do things, doing them, [etc]... From these considerations (that 'information' is data to which meaning has been attributed in a particular context, and that information systems serve action) two consequences flow. Firstly, the boundary of an IS, if we are using that phrase seriously, will always have to include the attribution of meaning, which is a uniquely human act... Secondly, designing an IS will require explicit attention to the purposeful action which the IS serves, and hence to the particular actions meaningful and relevant to particular groups of actors in a particular situation. (Checkland & Scholes, 1990, p. 54-55)

Such a view sounds quite reasonable at first glance, but a philosophical problem can be discerned concerning the notion of human free-will. Supposing a conceptual model (even one "thought-up" at random) was an *exact match* of some organized human activity (at least in the mind of the person who "thought it up") - for how long would it remain so? On this view the answer must be *indeterminate*:

... when a model of a human activity system does not match observed human activity the fault might be the model builder's but it might also be due to the autonomous real-world behaviour of human beings. *We cannot expect a match between model and reality ...* both because of the multitude of autonomous perceptions and because these perceptions will continually change, perhaps erratically. (Checkland, 1981, p. 249 [emphasis added])

As meaning attribution is, on this view, an essential element of information, any "model" of an *information system* (so-defined) will be inherently unstable. The problem with the philosophy underpinning SSM is that it allows so much freedom for humans to do as they will that organizational process modelling is rendered philosophically impossible. It is

difficult to see how information systems, as traditionally conceived at any rate, could ever be designed without according *some* initial stability to the organizational processes carried out by humans.

Compatibilism And Soft Systems Approaches To IS Development

What is needed in order to make progress is a theory of human "free-will" that allows for human beings to remain autonomous, whilst simultaneously allowing *regularly patterned* human activity to be cogently modelled. This would allow the advocates of soft approaches to IS development to preserve their arguments about the importance of "the human dimension" in such matters. Such a view of the philosophical problem can be described as *compatibilism*, and, in a recent study of the philosophical problem the following advice was given:

Compatibilists ... hold that philosophical diplomacy can, through modest modifications and mutual concessions, reconcile what are often thought to be the flat incompatible contentions of two camps formerly opposed. Many classical philosophers - including Hobbes and, most famously, Hume - have been, in this understanding, compatibilists. So that is not a position to be dismissed without examination. So not to be aware that it has been, and still is, most respectably held is really to disqualify yourself from full participation in the present discussion. (Flew and Vesey, 1987, p. 53)

It is here contended that the same is true with respect to the philosophical adequacy of IS methodologies, and it seems reasonable to suggest that such a (compatibilist) view does *not* entail that human beings are automatons. Quine makes the following observations:

Clearly we have free will. The supposed problem comes of a confusion, indeed a confusing turn of phrase. Freedom of the will means that *we* are free to *do* as we will; not that our will is free to will as it will, which would be nonsense. *We are* free to do as we will, unless someone holds us back, or unless we will something beyond our strength or talent. Our actions count as free insofar as our will is a cause of them. Certainly the will has its causes in turn; no one could wish otherwise. If we thought wills could not be caused we would not try to train our children ... we would not try to sell things, or to deter criminals. (Quine, 1977, p. 173)

There may be a possibility that any academic or practitioner who adopts a position which embraces the idea that the human will is restricted in any way whatsoever will always run the risk of accusation that what he or she is doing is "not proper SSM", moreover they may even be accused of subscribing to the philosophical thesis of determinism, a view which however unpalatable still has its adherents - for example Skinner, who says of attempts to explain behaviour as arising from some *autonomous* "inner man" in the "soul" of the person:

The function of inner man is to provide an explanation which will not be explained in turn. Explanation stops with him. He is not a mediator between past history and current behaviour, he is a *centre* from which behaviour emanates. He initiates, originates, creates,

and in doing so he remains, as he was for the Greeks, divine. We say that he is autonomous - and, so far as a science of behaviour is concerned, that means miraculous. (Skinner, 1973, p. 19)

However, as discussed previously, another view may be more plausible for IS process modelling:

The notion that determinism precludes freedom is easily accounted for. If one's choices are determined by prior events, and ultimately by forces outside oneself, then how can choose? Very well, one cannot. But freedom to do otherwise than one likes or sees fit would be a sordid boon. (Quine, 1987, p. 70)

Soft Systems Approaches can obviate some of the criticisms that have been made of the deterministic assumptions inherent in traditional systems analysis (e.g. Lewis, 1994), and Zuboff, who utilises some of Foucault's (1977) notions, considers that it is important to preserve an interpretive dimension for those working in organizations. She argues:

Organizational theorists frequently have promoted a conception of organisations as "interpretation systems". The computer mediation of an organization's productive and administrative infrastructure places an even greater premium upon an organization's interpretive capabilities, as each organizational level experiences a relatively greater preponderance of abstract cues requiring interpretation. (Zuboff, 1988, p. 392)

So, it is important to conclude that whilst regularly patterned behaviour may account for some behaviour in organisations, it not only does not - but should not - cover all behaviour, if the organisation is to be successful.

Conclusion

Adopting the *compatibilist* position on human free-will (that the human will is free, but that the human being nevertheless often pursues "patterned", apparently rule-governed, behaviour towards clear objectives) would bring three important benefits. Firstly, it would allow the advocates of soft approaches to IS to preserve their arguments about the importance of "the human dimension" in IS development. Secondly, it would allow for organizational processes to be modelled without the need for implicit deterministic assumptions about human nature. Thirdly, this would also enable IS modelling to be underpinned by an intellectually coherent theory of human free-will. In this respect it would appear that such philosophical assumptions may have an important role to play in determining the decisions made by computer-based information systems designers.

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