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Humanness as Colonial Systems

Jaana Porra
University of Southern California, jaana@uhupvml.uh.edu

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Introduction

According to the theory of systems, during the past two thousand years, only two ways of describing systems have been adopted widely enough to be called paradigms (Kuhn, 1970; Klir, 1972). The mechanistic paradigm of hierarchies of timeless, and context independent structures has roots as old as Plato (Mayr, 1982). The organic paradigm originated with the computer (von Bertalanffy, 1968). This paradigm is based on a simple input-process-output-feedback loop which adapts according to Darwinian/Spencerian, continuous, and gradual evolution (Darwin, 1979; Mayr, 1982). The two abstracted systems models have been adopted by the IS field to the extent that it can be claimed that the notion IS is mechanistic or organic by nature (Porra, 1996). This means that the current IS literature has very little human-like qualities unless it is accepted that humanness is like a machine (Porra, 1996). In this paper the author poses the question of humanness in relation to the two current systems paradigms (and the current notions of IS). An alternative systems model is proposed called colonial systems to be considered as the premise for more human information systems.

The concept of humanness

Humanness is a nebulous term. It has been defined in a variety of ways in several fields. For example, humanness has been said to be metaphysical and beyond the reach of the scientific method (Giddens and Turner, 1987). It has been said to exist in the hearts and minds of people (Geertz, 1973). Humanness has been said to differ from other organic life in that it has culture (Geertz, 1973). It has been held that humanness differs from machines in that it has intuition, instinct, creativity and reasoning power (Dreyfus and Dreyfus, 1986). Fields such as social theory, cultural anthropology and artificial intelligence have all attempted to distinguish humanness by expressing what it is not. This way of antithesis helps us to understand the boundaries of the problem. It does not, however, create alternative systemic axioms comparable to mechanistic systems or organic systems -- the only two ways of describing humanness as systems available today.

Humanness as Heideggerian being-in-time

In order to create more human systems theoretical foundations, the author chose Martin Heidegger's existential philosophy view as a starting point. Heidegger describes humanness (Dasein's kind of Being) as a phenomenon of the kind of context dependence in historical time which denies the closure required for objects or subjects (Heidegger, 1962). According to him, the human kind of being-in-time "is" in primordial (historical) time. This means that humanness is influenced by other human beings and the nonliving environment in a profound way throughout its history. Moreover, this evolution through contexts and time is used by the system for extraordinary change. The author adopts this Heideggerian viewpoint as humanness. She hypothesizes that the system of humanness is demonstrable on a systems continuum called being-in-time (Porra, 1996). It can be hypothesized that the humanness Heidegger refers to is a real system in that it objectively exists. Moreover, its existence through its own history is the only source of humanness.
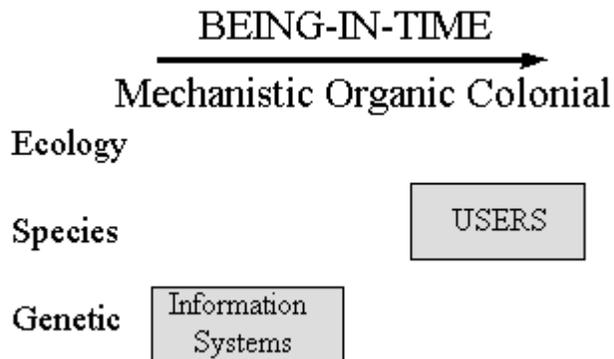
When the systems continuum is used to illustrate the mechanistic and organic paradigms, the problem becomes apparent (c.f., Porra, 1996). Mechanistic and organic systems are comparable to "things." They consist of no being-in-time (mechanistic systems) and a relatively modest amount of being-in-time (organic systems). On the systems continuum of being-in-time they reside to the left of more human systems. Both mechanistic and organic systems allow the closure required for objectification (or subjectification). Therefore, they cannot serve as the systems foundations for humanness.

Humanness in nature

Heidegger points out "existence" as the primary source of humanness (Heidegger, 1962). Existence is another way of saying "self" (Parks and Steinberg, 1979). Self, on the other hand, is a form of "life" (Mayr, 1992). The author proposes that to explain human systems, humanness has to be explained as a living system -- which is beyond the mechanistic and organic paradigms since humanness requires open endedness not previously described as a system. The author assumes that humanness is a form of life at a level of "nonclosed" systems in nature (Porra, 1996). In nature, these kinds of systems are known to occur at the level of species (Eldredge and Gould, 1972).

Referring to a "living system" as the systems premise for humanness is problematic. Today, we do not know what "life" is. There is no substance or force which could be identified as life (Mayr, 1982). The only aspect which is known about life is that it evolves. This means that what life is today is a product of its own history (Mayr, 1982). In systems theoretical sense, it can be said that life in general and the human kind of life in particular is a system of some kind. This is because anything can be called a system (Klir, 1985). Of the two existing ways of describing systems, the mechanistic paradigm has to be rejected because it recognizes no evolution. Since Heideggerian being-in-time rejects objectification as the premise for human systems axioms, organic evolution as described by Darwinian/Spencerian, progressive, gradual, adaptive and continuous development also does not apply. No systems paradigm exists for the axioms of humanness.

The author proposes that humanness is more like a species than it is a simple mechanical machine or a computer-like organism in that a species has no definite closure. This means that humanness may evolve like a species does. An alternative model for evolution which is potentially more suitable for explaining the evolution of humanness than the current systems paradigms, is found in Eldredge and Gould (1972). Their model of punctuated equilibrium defines the mode of evolution for species, and as the author proposes, for humanness. The author calls the system of humanness which evolves as a species level system a colonial system (see figure below) (Porra, 1996).

BEING-IN-TIME
Mechanistic Organic Colonial

Ecology

Species

USERS

Genetic

Information Systems

Humanness as colonial systems

Colonies in nature occur at the species level. The strength (weakness) of animal and plant colonies is defined by the degree to which the participating animals or plants are like (distinct from) one another (Banta, 1987). This definition can loosely be adopted to describe humanness as a colonial system of Heideggerian being-in-time. As a species level system, a colonial system evolves (phylogeny) through stasis (meaningless fluctuation) and violent punctuations (radical change) as described by Eldredge and Gould (1972). Since a colonial system occurs at the species level, it has no lifetime (ontogeny). At this level, the lifetimes of organisms do not apply. Moreover, because humanness is not a thing, it has no definite boundaries. Instead, it is influenced by its context through fuzzy boundaries which allow a wholistic influence of context (other human beings, organic life, and things) on the colonial system. Potentially everything the human system has ever evolved through is in the system as a part of its humanness. Since every system evolves through a unique path of experiences, by definition, each colonial system is different from every other. As a colonial system, humanness is: diverse; intimately involved with its context; and an extremely "change able" system.

Since a colonial system is not a thing, it is not bound by the laws of complexity or structure in a similar way to objects. Its ability to change its size (growth) in radical shifts introduces a system which can alter its complexity and structure at will. Because of its history, a colonial system is a relatively independently operating unit which chooses its goals and the ways to achieve them. The history of the system is the sufficient and only source for the system to achieve its own objectives. The history of the colonial system is also the source of nearly complete endogenous power. As a colonial system humanness is emancipated by definition.

In a colonial system, endogenous power means that every colonial system holds complete power over itself and no power over its environment. This is true even when the system decides to surrender authority over itself to its environment. Thus, a colonial system can retain the power over itself at any time. The unique nature of an emancipated colonial system is that it complements adaptive qualities (feedback) with an effective feedforward (control) mechanism. A colonial system is the only known system which uses feedback only as a corrective device assisting its proactive long term goal setting. Although humanness as a colonial system enjoys relative freedom from its environment to change in unforeseen and unexplained ways, it is always bound by its own existence (evolutionary history); its current environment; and to some extent, its current microlevel structure (biology). Colonial systems describe humanness as a relatively free agent when viewed from the levels of systems assumptions. In a colonial system of humanness, this freedom is a product of the history of the system.

Colonial systems and IS research

If it is accepted that humanness is colonial by nature, the current IS research literature does not address humanness (Porra, 1996). It is mainly based on the mechanistic and organic systems premises. The field describes an ahistorical IS which has no evolution. Rather, it adapts to its environment during its alleged lifetime in an ambiguously defined evolutionary context (c.f., Nolan, 1973; Lyytinen, 1987; Budde et.al., 1992; Ein-Dor and Segev 1993). This kind of IS has relatively fixed boundaries with controlled access points (environment variables) (c.f., Ives, Hamilton and Davis, 1980).

Information systems have grown in complexity (c.f., Hirschheim, et.al., 1996). Moreover, every individual IS grows in size and in complexity until mature. Beyond the change curve characterized by the life-cycle model, the nature of change in IS's and the relation of this change to the change of the organization is largely unknown (c.f., Markus and Robey, 1988). What is implemented in the IS is determined by the power exercised in the IS design process. This power is mostly exogenous and in the hands of those who hold power in the formal organization (c.f. Orlikowski and Robey, 1991). Currently, the IS development process is analogous to a product development cycle (c.f., Budde et.al., 1984) in a mechanistic organization (Melcher, 1975). In summary, the current IS literature emphasizes organizational control through automation of simplified, objectified tasks. Such an exercise has nearly nothing to do with humanness as defined by Heideggerian being-in-time. Instead, it is an example of mechanistic thinking more familiar from Taylorism. An IS is a thing.

Conclusion

This paper has shortly illustrated how philosophy can be used to reflect the status of IS research. Particularly, existential philosophy has been used as a way of pointing toward more human theoretical foundations for IS research at the axiomatic level. If it is accepted that humanness is colonial by nature, humanness is currently out of the reach of the IS community. If more human IS's are accepted as the purpose of the IS design (c.f., Mumford, 1990), this paper calls attention to what is implemented in computer based IS's instead of humanness. More seriously, what is the potential impact of accepting simple machines (be they mechanistic or organic) as a foundation instead of humanness? The long term impact of such a choice is the main concern. It is the author's conviction that the question of the nature of humanness is the most important question for the field of IS research to raise. This is because it is the discipline most intimately involved in designing human computer based systems.

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