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December 2001

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### Recommended Citation

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# INFORMATION SYSTEMS IN THE LIFEWORLD

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## Abstract

*This paper sets out to bring the 'lived experience' of the people in information systems into the foreground of the IS discipline. It considers why the subjectivity of the user has not featured strongly in IS and what the consequences of this omission have been. Schutz's analysis of the structure of the lifeworld is used to give a deeper understanding of subjectivity and lived experience. This is then applied to a consideration of how information systems figure in the lifeworld. A programme of phenomenological research into information systems in the lifeworld is called for and some preliminary analysis and speculation is offered.*

**Keywords:** Information systems, lifeworld, phenomenology.

## Introduction

It is sometimes thought to be a feature of Information Systems, as a discipline distinct from Computer Science, that it takes more notice of the *people* in an information system - its users, certainly, and perhaps others such as its commissioners, managers, and designers. Yet it seems to me that little account is in fact taken of people as such, that is to say as flesh and blood human beings, rather than as agents with specific limited roles (e.g., suppliers of requirements, sources of keyboard input, consumers of reports, signers of documents). Why should this be? Some of the reason for it must come from the dominance of the systems perspective itself, which is less concerned with the individuality or subjectivity of people in the system than with their functionality within it.

Boland, in his analysis of misconceptions and fantasies of information prevalent in the literature of management science and computer science, proposes - as an antidote to them - to take dialogue, interpretation and the individual's search for meaning as central (even 'sacred'):

'Any fantasies which present disembodied, ahistoric images of information divert us from a search for the lived experience of organizational members and must be rejected.' (Boland 1987, p. 377)

This paper takes up Boland's suggestion to explore the lived experience of organizational members, and more generally of anyone whose life includes encounters with, or involvement in, information systems. Boland further suggests that we should re-cast the concept of information so that, instead of referring to something externally present and independently meaningful, it denotes instead a process of inward formation by which people assimilate what happens to them and integrate it into their lived experience. This points us towards an analysis of individuals' 'lifeworlds' - the world that they experience, and that appears to them in consciousness as they live their lives. 'Lifeworld' is a concept introduced by the phenomenological philosopher Husserl and subsequently developed in a sociological direction by Schutz. Schutz's final work, edited and supplemented by Luckmann (Schutz & Luckmann 1974), gives a detailed account of the structures of the (everyday) lifeworld, and will be the principal source used here.

One reason for the relative lack of interest in 'lived experience' in our discipline may be an underdeveloped *ontology*. In a comparison of the work of Bateson and Maturana, Dell (1985) remarks that Bateson failed to make a clear distinction between ontology (the study of being) and epistemology (the study of the methods or grounds of knowledge), and in fact subsumed the former under the latter. For Bateson, says Dell, ontology is "the road not taken". Since Bateson was an influential figure in the early development of cybernetics, from which systems analysis and the discipline of information systems emerged, the failure to delineate a separate ontology may be a reason why information systems has more to say about knowledge, information and decisions than about the structure of the world and the place of human beings in that structure. Dell suggests that Maturana's

theory of autopoiesis, which defines living systems as self-producing unities, supplies the ontology perhaps implied by, but lacking in, Bateson's theory.

I have in another paper (Beeson 2001) examined the implications of the theory of autopoiesis for the discipline of information systems. Autopoiesis's primary focus is on the cell and on multicellular organisms, but Maturana and Varela (1987) sketch an intriguing progression from first-order unities (cells) to third-order unities (social systems). The logic of their theory puts individuals before species, being before knowing, cooperation before communication, communication before language, and language before thought. To us as conscious beings, thought seems to have a primacy which is not confirmed by biology. Nevertheless, as conscious beings, we can explore our apprehension of the world through consciousness. This is the project of phenomenology. Since phenomenology explores the nature and structure of the individual's existence in the world, it may have a fruitful meeting place with autopoiesis. Autopoiesis treats individual living systems as 'structure-determined unities'. Phenomenology opens up the structure of the conscious level of being.

In the remainder of this paper, I present a summary statement of some of the key elements of Schutz's analysis of the structures of the lifeworld, in order subsequently to explore some of the consequences for our understanding and construction of information systems - if we see them as projections into the lifeworld. First though, it will be instructive to note the absence of the *subject* from the discipline of information systems.

## The Absent Subject

The discipline of IS is interested in the qualities of the entities, relationships and processes in its *representations*, and how they may be established as a basis for a design. It has not been so interested in the nature of things and persons in the world as such. In particular, it has not recognized the *subject* in the information system - the autonomous individual working in or with the information system, whose existence is not merely as an adjunct of the system, and who operates as a whole person, not as a fragmented collection of interaction episodes. The information system establishes itself as a controlling operational reality, with its users as functional attachments. Generally, who the user (or designer) is is of no relevance to the operation of the system.

The deletion of the subject leads in turn to the absence of any idea of the human being in an information system as *embodied*. One might indeed say that the central thrust in IS thinking has been to *disembody* information (I have explored the missing body in an earlier paper - Beeson 1997). The body is not ignored in computer system design, but it is not apprehended as a subject's body, as a lived body. Studies of human-computer interaction concentrate on task analysis, screen and keyboard layout, dialogue design, and mental models. The body is separated from and subordinated to the mind. Interactive systems design immobilizes the body in a more or less comfortable position so that the mind and its chief agents (eye and hand) can be held in close proximity to the machine interface.

The neglect of the body is attributable not only to a lack of interest in the user as a person (as a subject) but also to an entrenched view of the body as a mere platform for the mind. In the devaluing of the body, it becomes just a physical object in the world, an object for doctors, human factors engineers and tattooists to work on, an imperfect and unreliable container for the mind. Systems analysts have solved the mind-body problem by removing the body. Artificial Intelligence experts strive to reproduce the mind on more reliable platforms. In the world of work, muscle and bodily labour are replaced by thinking and supervision.

But if the mind is first and foremost embodied (as phenomenology and autopoiesis both insist) it is dangerous to tread a path which allows the progress of technology to deepen the split between mind and body and elevate the one above the other. Johnson (1987) argues that the fundamental structures of our understanding arise in our bodily functioning as recurring patterns in our mundane experience. The rational abstractions we so prize are merely secondary productions, extensions of more basic categories rooted in bodily experience. On this view, meaning is not achieved by the autonomous operation of the mind, but by mortal people working through their lives together.

However, the more commonly accepted separation of mind and body, the absence of the subject, and the elevation of rational decision processes combine together to produce a series of powerful effects which shape the unexamined background of our work in information systems. Organizations come to be seen as complex patterns of information flows between decision points. These flows and decision processes become the subject of abstract formal representations and programs. It is thought unproblematic to abstract information, knowledge, and entertainments from the contexts in which they arise, store them in some technical apparatus, transport them across a network, and make them available for consumption by an invisible community of users. Decision making and control are raised up to become key activities in organizations, and the basis for the definition of a management hierarchy whose stratification reflects primarily the increasingly intractable and risky nature of decision making at the higher levels. IT is used to automate physical operations and to standardize, regulate and where possible automate other

routine activities (eg, clerical operations), in the interests of organizational efficiency. Even the decision making and control activities themselves become candidates for automation. That the rapid computerization of society has proceeded without much opposition is no doubt due in part to the concomitant growth in material prosperity and the opening up of new areas of work. But it may also have been made easier because the discipline and practice of information systems accord no central place to the human beings whose lives flow in and around the systems that are built.

Even in more human-centred approaches to IS than are common in the mainstream, the human being as an embodied subject is not fully present. Checkland and Scholes (1990) bring human purpose and interpretation inside the IS boundary and give them an important place in IS design - but only in order to clarify meanings and intent, to get a 'root definition' which is truly more rooted in organizational reality. Flood and Jackson (1991) recognize *participants* as one of the key dimensions for grouping problem contexts in their systems intervention methodology - but only in order to classify organizational situations as a means of selecting an appropriate design method. We can welcome these attempts to move IS theory and practice beyond a concern with technical interests towards engagement with practical interests. But still the shift of focus is only from machines and programs to texts and positions, and not all the way to the flesh and blood participants themselves. Even Winograd and Flores (1986), in seeking to move the perspective in interactive systems design away from people interacting with computers towards people interacting with one another - through the *medium* of a computer or network - still put the chief emphasis (in their work on the Coordinator system), on the flow of symbols in a computer-supported conversation.

The recognition of the lived experience of the embodied subject in the discipline of information systems will not come from pragmatic adjustments to current methods and concepts, but only from a more fundamental reworking of the ideas underlying the discipline. The next section explores one possible reworking, following Schutz's analysis of the everyday lifeworld.

## The Everyday Lifeworld

Schutz defines the everyday lifeworld as 'that province of reality which the wide-awake normal adult simply takes for granted in the attitude of common sense' (Schutz & Luckmann 1974, p. 3). In the 'natural attitude' of everyday life we take for granted several things: the corporeal existence of others; that others have consciousness like ours; that things in the world are the same for them as for us and mean the same to them as to us; that we can enter interrelations and reciprocal actions with our fellows; that we can make ourselves understood to them; that a stratified social and cultural world, as well as a natural world, is pre-given; and that our situation is only to a small extent our own creation (Schutz & Luckmann 1974, p. 5). This natural attitude is furthermore determined by a 'pragmatic motive': the lifeworld is the arena for, but also sets limits to, our actions; we act within but also upon the lifeworld and our actions are modified by it as we act to modify it; our bodily movements 'gear into the lifeworld' (Schutz & Luckmann 1974, p. 6). The lifeworld is not closed, but taken as valid provisionally - 'until further notice'. We assume previously successful acts can be repeated, and that previous experiences remain valid. We accommodate new experiences unproblematically so long as they are in line with our existing knowledge and expectations. When we encounter something not easily explained, we try to deal with it by restructuring our lifeworld: then we know how to go on. (Schutz & Luckmann 1974, p. 7. Schutz here makes reference to Husserl's analysis of "and so forth" (Husserl 1969). See also Wittgenstein's treatment of "now I understand" (Wittgenstein 1958, paras. 153-154) and of "and so on" (Wittgenstein 1958, para. 208).). The horizon of our everyday lifeworld is always open.

The everyday lifeworld is the paramount reality, to which we always perforce return. Other realities, met for instance in dreams, in TV and theatre, in jokes and stories, in religious experiences, or in adopting the scientific attitude, are finite provinces of meaning, surrounded by the everyday lifeworld (Berger & Luckmann 1984, p. 39). The reality of everyday life is

“...organized around the 'here' of my body and the 'now' of my present. ... What is 'here and now' presented to me in everyday life is the *realissimum* of my consciousness.” (Berger & Luckmann 1984, p. 36)

The lifeworld is fundamentally social. It is intersubjective from the start. As we project our own plans into the lifeworld, we encounter other people doing the same. These are not just organisms, but bodies endowed with consciousness, like us. (Schutz & Luckmann 1974, p. 15). Their zone of operation and biographical articulation are different from ours, but we assume interchangeable standpoints, congruent systems of relevance, and reciprocal perspectives. (Schutz & Luckmann 1974, p. 60). The immediate experience of the other, in encounters (especially face to face), is the foundational, prototypical case of interaction, from which all others are derivative. Berger and Luckmann (1984, p. 44) describe the other as 'massively real' in the face-to-face encounter: immediately present, demanding minute attention, and more real to us than we are to ourselves. More distant others, on the other hand, become progressively more anonymous the further removed they are from our 'here and now', and we can more easily reduce them to types. Our social reality is a continuum of typifications, subject to disruption by closer encounters. As

they recede from us, other people cease to be grasped in their unique individuality and become simply contemporaries, predecessors and successors; as their anonymity increases, they can become for us mere functionaries.

As well as these social arrangements, the lifeworld, in Schutz's analysis, has a spatial and a temporal arrangement, spreading out from the here and now. In spatial terms, part of the world is within actual reach and we have a primary zone of operation in which we can act directly. Beyond that, the world is organized into parts we could potentially reach - either by moving back to somewhere we've been before, or by going somewhere new. Beyond our primary zone of operation, we have secondary zones in which our action is indirect or mediated (Schutz & Luckmann 1974, pp. 36-45). Temporally, the everyday life world is experienced as finite, with a fixed course into which we project our plans. Things come to pass in a certain order ('first things first' - Schutz & Luckmann 1974, pp. 47-50). Each of us experiences time subjectively (but at the same time objectively). Our biographical situations consist of the history of our experiences.

Schutz presents lengthy analyses of knowledge, both in relation to the lifeworld and in relation to society (Schutz & Luckmann 1974, Chapters 3 and 4). All our knowledge is biographical in character. Apart from our most fundamental knowledge, which forms a bedrock (the knowledge that we are situated in the world, and of the nature and limitations of our situation), every element of it comes out of our lived experience, and has become absorbed (or 'sedimented') into our stock of knowledge. We use our stock of knowledge to define and master each situation in which we find ourselves. Our lifeworldly stock of knowledge is not built up from rational cognitive events on a theoretical basis, but is the sedimentation of our subjective experiences (Schutz & Luckmann 1974, pp. 122-123). It is acquired biographically and ordered according to credibility. It is socially conditioned (inevitably, since the lifeworld is intersubjectively constituted). But it is not completable, since we can never arrive at any fully transparent situation. Nor is our stock of knowledge likely to be consistent. We may try to unite elements of it in order to master a situation, but that can only be temporary, since situations are heterogeneous. Elements of our knowledge come from different provinces of reality and may have nothing at all to do with one another. In the natural attitude, there is no motivation to keep all the elements of our knowledge in agreement (Schutz & Luckmann 1974, p. 154). Given this, it will not generally be the case that our actions in the world are determined by a rational choice predicated upon full knowledge of means and ends and the interrelations between them; these will in any situation only ever be partly visible, and the actor will always have recourse instead to a situation-dependent mixture of experience, conjecture, rules, habits, and suppositions.

The subjective acquisition of knowledge is the origin of all social knowledge, but the social stock of knowledge is not simply the sum of individual stocks. Rather, subjective elements of knowledge are 'objectivated' into the everyday lifeworld and are there interpreted by others as indications of subjective processes. Subjective knowledge is not only objectivated in acts or gestures, but also in products and tools, and in signs and systems of signs. From an intersubjective starting point, objectivated knowledge is systematized, institutionalized and transferred through the social structure - and internalized again by individuals encountering one another as members of society. The process of objectivation, as it becomes progressively generalized and removed from subjective experience, involves an anonymization of the original knowledge. When knowledge is represented through a system of signs, detached from the subjectivity of the producers, the subjective meaning-context is replaced by an objective meaning-context, in a process which is inevitably falsifying (because the knowledge is no longer rooted in subjective experience, and therefore has escaped everyday pragmatic criteria for scrutinizing it) (Schutz & Luckmann 1974, p. 283).

## **Information Systems in the Lifeworld**

How then do information systems figure in our lifeworld? I want first to draw a distinction between IS in the lifeworld and the lifeworld in an IS. The considerable body of work on lifeworld analysis by Agre and Horswill (1997) uses ideas about the lifeworld similar to those explored here, but in order to model lifeworlds on a computer system. My interest is in the lifeworld as we experience it as human beings and how information systems impinge on it. I cannot see much connection between Agre and Horswill's modelled lifeworlds and the actual lifeworlds under discussion here.

When we encounter information systems, when they are projected into the course of our life, what is the structure of the situation? Where do they fit into the spatial, temporal, and social arrangement of our lifeworld? How do we relate them to our 'here and now'? The first and truest answer to these questions is that we do not know. We have not yet studied them enough. Although system usability has been extensively studied, the focus is on how well the feature of the system works, not on the reformation of the user's lifeworld, and the research is conducted objectively. What is needed is a programme of research which looks at how the system feature - and how the system as a whole - is apprehended in the consciousness of the user and how it affects the structure of the user's lifeworld. What kinds of social encounters are possible in the information system? When I work at a computer, or use a network to communicate with someone, what is the nature of that encounter? Is there a shift from face-to-face encounters to more remote relations with contemporaries? On the computer, where is my here, and when is my now? How does my subjective stock of knowledge relate through my involvement in information systems to the social stock of knowledge? Are

the systems of signs and objectifications I encounter credible to me? There is plenty of scope for subjective studies of 'mastering the situation' when it comes to using a complex computer system or learning a new piece of software. Within the information system, what is in my actual reach and what in my potential reach? What are my primary and secondary zones of operation? Where does the information system fit in the temporal order of my life? We must also find a way of asking the question, when is an information system part of my everyday lifeworld, and when do I enter it as a finite province of meaning (ie, as a secondary reality from which I will return)? This research will be essentially subjective, rather than objective, and conducted along phenomenological lines.

Pending results from a programme of research such as that sketched above, we may speculate about the findings or make preliminary suggestions arising directly from the analysis so far. When we investigate lived experience, we are concerned with experience as embodied and as situated. Experience must be related to the mindful body as its first locus, and to the situation of the body in relation to place and to others. These relations interact and overlap and may be radically affected by information and communication technologies and the IS built upon them - which may exclude or constrain the individual's body, disrupt or anonymize interpersonal relations, and obscure, neutralize or render irrelevant local contexts. These tendencies, taken together, may have a profoundly deracinating effect - loosening a person's ties to localities, community, and the material world as such. If IS are located in the everyday lifeworld (the world of work, for instance), they are bound to affect the ongoing collaboration of people, and the intersubjective construction of reality and meaning. IS disrupt previously normal patterns of communication, and introduce in the form of the computer an intermediary of uncertain status, or replace an other directly encountered by a distant contemporary or predecessor. It might well be important to retain the possibility of at least some face-to-face encounters in everyday life, since this is where we are at our most real. Withdrawn into a world of mediated encounters, we may lose the ability to engage with others in their individuality, and fall into a world of caricatures.

In an information system, we may plunge into a different province of meaning, and experience a loss of reality, or of responsibility. This is particularly a worry about prolonged exposure to IS such as game or virtual reality systems, or to the Internet. It may be an undue worry, given the plasticity of the human organism: we can construct new worlds. However, as Berger and Luckmann point out (1984, p. 69), humanness is intrinsically social. The social order re-closes the world for each individual. If it doesn't - if we stay too long away from the everyday lifeworld - what will happen? It may be that people will find themselves 'lost in hyperspace' (Nielsen 1995, ch. 9) not only because of poor structure in a hypertext, but because they have lost their anchoring in a social realm.

In the phenomenological account, knowledge is subjectively acquired in the course of life, is open in character, and is intersubjectively constructed. How then can it be abstractable into databases and knowledge bases? It cannot, without loss of meaning. Knowledge remains in, and remains open in, some community; if the symbols move, meaning has to be reacquired, or reinvented, or reincorporated. Similarly, since 'rendering into signs' is inherently falsifying, how can a specification capture the entire truth about a requirement or a product in the making? It cannot. Specifications are necessarily incomplete and provisional. System and product design must remain a collaborative venture until the very end.

Since all types are provisional and revisable, how can we define a set or hierarchy of types in data modelling or knowledge modelling? The answer again is that we cannot, without ossifying some partial typification as though it were final and complete. The implication is that systems should be defined to be open both to extension and to localization.

If rational decision making or choice is a secondary production, and not a primary mode of thought, how do we justify design methodologies or interfaces (not to mention organizational structures) which make them central? It would seem sensible to drop them in favour of methods and models which are looser, eclectic and modifiable, so as to support freer and more situation-specific processes of thought, work, and organizing. There may be political or ideological considerations (objectifications) which prevent this.

Our situation in the everyday lifeworld is that we are always *in* a situation, and that our situation is always limited and organized around our 'here and now'. How can information systems accommodate and respond to our situation? Again, the implication is that methodologies and system designs which abstract, rationalize, generalize, and totalize - and so lose us in an information space which has no anchors for us - should be dropped in favour of others which put the subject at the centre and allow the user to define and move around an information space.

By accident (almost), the World Wide Web (WWW) provides some of the very features we want: home pages, free navigation, information spaces which are user-definable and only minimally pre-structured, and user-selected and (less extensively) user-defined linkage from one piece of information to another. Nielsen (1995, p. 16) suggests that hypertext systems enjoy a superiority over artificial intelligence systems because they rely on natural (i.e., users') intelligence to tackle complex problems. This is not to imply that the WWW is an ideal medium in its current state. Its size, complexity, and relative lack of structure pose serious problems of orientation and navigation for users, and the remoteness of relationships on it place a severe strain on the

users' credence in information obtained. We can say that the WWW does 'gear into' the lifeworld more than other forms of information technology, in that we can use it to make information systems for ourselves which better reflect our lifeworlds. We can imagine how facilities could be improved - with better tracking of a user's position and movement in their information space, and a representation of time more faithful to users' subjective apprehension of present, past and future. A degree of support for intersubjectivity can be achieved if we can cross over into one another's websites - though this will be limited, since intersubjectivity will remain rooted in the person-to-person encounter.

As regards physical space, Volpert (1992) has made some suggestions for designing work tasks which recognize the physical (and social) nature of the worker. He recommends that work tasks provide for sufficient and varied bodily activity and call for the use of a wide variety of sensory capacities. Work tasks should provide for concrete handling of real objects and in addition ensure direct relation to social conditions. Work tasks should also contain sufficient variation around a central core of tasks to avoid a descent into monotony. Considering the spatial structure of the computer system (the physical system itself rather than the world on the screen), arrangements more congenial to the lived body are possible. We perhaps are not condemned for ever to sit perched close up to screens, cooped up with our fellows as if in a battery farm. We could conceive of more extravagant physical forms: why not a walk-in information system, or a split level information system?

## Conclusion

I have argued that Schutz's analysis of the structures of the lifeworld provides us with a good basis for understanding lived experience, which we can then use to bring the subjectivity and experience of users and others involved in information systems to the fore in our discipline. I have given some preliminary indication of the changes to the conception and design of information systems that might follow from putting the subject at the centre of the system, but also suggest that a programme of research is required which will explore in detail how information systems enter into the structure of the lifeworld. The next step in this line of enquiry will be to develop the suggested programme of research and embark upon it. The possible complementarity between autopoietic and phenomenological accounts of information systems is another avenue of research that appears promising.

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