Gunilla Bradley's 'Good Society' and Structuration Theory: an Exploratory Excursus

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Introduction

In an earlier, short review of Gunilla Bradley's 'Social and community informatics: humans on the net' (Bradley 2006; Stillman 2008), it was suggested that this was a wonderful book, written from the perspective of a Scandinavian woman with a life-time's experience of working with, and thinking about social technical issues in work and everyday life. This joint contribution is intended as another acknowledgement to her work and support of others, particularly through the Community Informatics conferences held in Prato, Italy. What struck us in reading her book that it would be worth attempting a study of the relationship between her people-centred theory, and the theory of structuration as developed by originated by the British sociologist Anthony Giddens, and then interpreted for ICT research (Bryant and Jary 1991; Jones and Karsten 2003). This task appears particularly worth doing because Gunilla's personal perspective, based on years of field research and presenting a synthesis of many publications (as well has her roots in the Swedish social-democratic tradition, rings a strong chord with Giddens' social-democratic orientation.
This Festschrift contribution represents opportunity to suggest some modifications for further consideration in the model, as well as reflections on its relationship to broader concerns in social theory as a teaching, research, and a practice tool for Community Informatics.

New Engineers or New Information Professionals?

Bradley's book was prepared with what she said was 'new kind of engineer in mind' in a society where ICTs were pervasive in augmenting all forms of communication processing (Bradley 2006: 3).

However, given the increasing diversity of people engaged in knowledge and information work that involves questions of design, testing, implementation and theorization about ICT artifacts and relationships, it is not just a question of a 'new type of engineer'. This is an observation that can be drawn from the critical approach developed by Hirschheim and others in their attempt to deconstruct the many complex domains and tasks which cover Information Systems design: no one person, or particular discipline. can be expected to cover the huge range of skills required for the creation of increasingly

complex social-technical networks and products in a globalized world (Hirschheim, Klein et al. 1996).

As Bradley observes, broad education and exposure to fundamental social theories and concepts are necessary for the creation a broader cohort of ICT professionals and practitioners, who can think beyond traditional 'engineering' problems. A broader educational model also indicates the need for a dialogue between non-technical practitioners such as community development workers and those responsible for the design of technical systems, and critically, the engagement of communities themselves in the design process. This is where the perspectives drawn from Community Informatics and the related field of Development Informatics can help to establish richer understandings of what is needed to make more professionals conscious of the complexities of working with social-technologies for social betterment.

For those unfamiliar with the literature and practice of Community Informatics, it is an increasingly well-documented approach to empowering communities with information and communication technologies which brings to bear insights from Information Systems, and Social Informatics (Lamb and Kling 2003). Gurstein, who is widely cited in Community Informatics, recently suggested that Community Informatics involves

> *"… a commitment to universality of technology-enabled opportunity including to the disadvantaged; a recognition that the "lived physical community" is at the very center of individual and family well-being – economic, political, and cultural; a belief that this can be enhanced through the judicious use of ICT; a sophisticated user-focused understanding of Information Technology; and applied social leadership, entrepreneurship and creativity' (Gurstein 2007: 12)*

That is, Community Informatics is a type of social-technology theorization and practice that promotes social change and human development in conjunction with technology by engaging with local communities and even smaller groupings, such as community organizations, families and informal groups (Stillman and Stoecker 2008). The study of embedded and localised, in situ interactions has led to an increasing number of studies in the IS field, in part because of the failure of traditional, positivist methods of IT research in preference for other forms of theory and research, that 'make visible' what can be so easily missed (Suchman 1995). Technologies can be constructive or disruptive to established ways of doing things, with any combination of effects between, and this is just as much the case in community settings as anywhere else. How to recognise and work with social-technical diversity is also part of the Community Informatics domain of activity. (Avgerou 2002).

From the community development perspective, communities function as locales for 'solidarity and agency', in which solidarity represents deeply held bonds, brought to fruition through human agency (Bhattacharyya 1995), though of course, communities can be disruptive and non-harmonious as well. Despite this restriction, the idea of 'solidarity and agency' at the core of community life also provides a less bounded dimension to the idea of community since it transcends geographic limitations, and can incorporate more dispersed, as well as virtual affiliations. Day and Schuler provide an additional perspective by suggesting that:

> *Community and voluntary sector groups and organizations form the bedrock of community life through the planning, organization, provision, and support of community activities and services. Although usually under-resourced and over-stretched the community and voluntary sector play a significant role in building and sustaining community. (Schuler and Day 2004: 13)*

With its emphasis on empathetic understandings and action being developed with a community's engagement with technology, Community Informatics is part of the interpretive tradition of action research that values accepts multiple, divergent, and even contradictory 'definitions of the situation', in natural and real world settings (Berger and Luckmann 1966). This orientation is often predicated on theories of social change (Kubisch 1997), and is associated with community development practice in both developed or developing countries (Rothman and Tropman 1970; Heeks 2002).

As an example of this approach, what can be called call people-centred 'technologies of care' predominate in many community settings, which emphasize human communication and personal development. Studies have been based upon close studies of the meanings given to technology by workers engaged in face-to-face and sometimes, distributed human services work and community education such as that found in small-scale neighbourhood welfare and educational support organizations (Stillman, Kethers et al. 2009) . Of course, not all community organizations need have the same orientation toward the use of technology (for example, a sports club), but it can be used as an example of embedded 'situated use' being identified and then with a particular way of working with or interpreting technology (Suchman 1995; Orlikowski 2000).

Technologies of care can be understood as an 'instrumental ensemble' of personal tools and professional techniques, particularly influenced by women's culture and practices in the helping professions. Once again, homage should be paid to Bradley's insights on gender, and this perspective can also be filled out by a growing literature on the feminization of the workforce, including the impact of ICTs on women's work (Wajcman 2001; Huws 2003). ICTs as part of this ensemble influence the shape of communications and action, subject to human intervention and modification. However, as part of the overall technologies of care, ICTs are not pivotal as the vehicle of communication and must be conceived of as part of a process of action and agency for community development and support. They have an adjunct and subsumed function in supporting a cycle of knowledgeable and skilled practices or technologies in the area of community support. However, the *personal meaning* of work is not well explored in Community Informatics writing, and this is where Bradley's model becomes useful.

Bradley's Psychosocial Model

Bradley regards work as an activity with deep psychosocial meaning, and the workplace under the impact of modern technology is not inherently degrading to worker interests. Enlightened management practices allow for personal autonomy and human growth. Skilled work, in capitalist societies, like family and leisure, is an important part of human existence and it should allow people to 'achieve a *socio-emotional* balance' by

supporting social norms and emotional fulfillment…[these are] major requirements for job satisfaction, psychosocial health and productivity (Bradley 2006: 153).

Sociologically, her views reflect a Durkheimian (Lukes 2004) and structural-functionalist approach (Abercrombie, Turner et al. 2000: supra Functionalism) to workplace order, with an emphasis on what is called 'organic solidarity', through the sharing of values, attitudes, and ways of behaviour. While the details of the differences between Durkheim and other key thinkers such as Weber who took a strong interest in the functional ordering of organizations are beyond the focus of this paper, structural-functionalists emphasize the role of *voluntaristic* belief, ideology and group *socialisatio*n, rather than the *compulsion* through economic necessity or hegemonic effects that are familiar in various Marxist analyses of power and ideology, drawing on the writings of the Italian theorist Gramsci (Poulantzas 1969; Miliband 1973). This is a viewpoint also developed in critical studies of workplace deskilling via technology(Braverman 1975; Huws 2003).

Her depiction of 'objective' and 'subjective' conditions which are involved in creating socio-emotional balance are addressed in more detail in the discussion below, but at this point, it is sufficient to simply use her terminology to carry forward the discussion. The downside of inappropriate use or implementation of technical systems is manifested in workplace stress, illness, and industrial chaos, and in the home, with family stress and consequent problems.

As a further step in her integrating approach, Bradley has developed a picture of society as a whole, as ordering through the effects of ICTs.(Bradley 2006: 52ff.). Of particular interest to community informatics is her suggestion that the future home could become 'a multi-purpose and…communication centre', which acts as a centre for the democratization of dialogue through communicative interactivity, a marketplace, a learning centre, and as an entertainment centre (Bradley 2006: 128), all of which is dear to the Community Informatics agenda.

The following figure summarizes her thinking:

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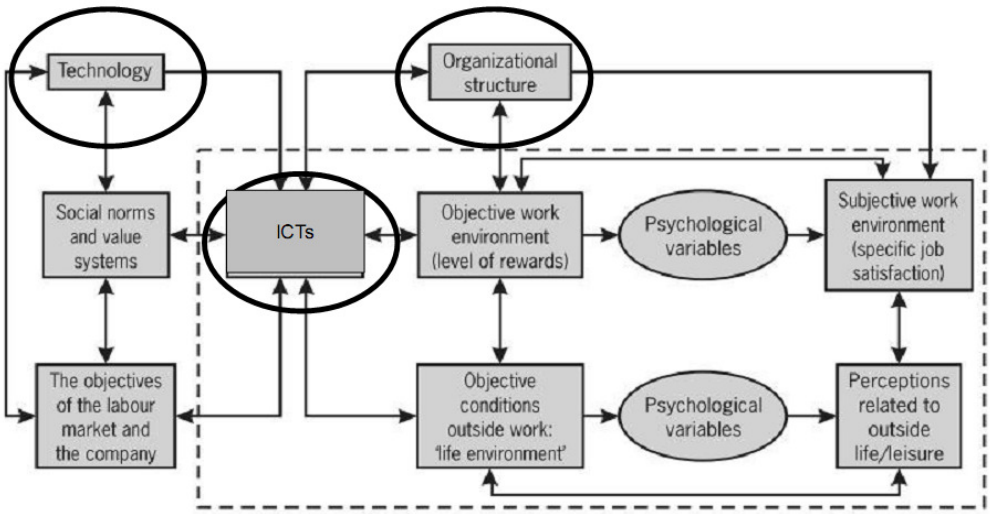

Figure 1: Bradley's theoretical model, from Bradley (2006), p. 31 modified (the box 'ICTs' replaces 'Computerized information system')

Three key factors underpin her model: the overall technology available in a society, the specific ICT/s being used in an organizational setting, and organizational structure. In the original version of the diagram, based on work published some decades ago, ICTs are referred to as 'Computerized information system', but we suggest that ICTs are a much more contemporary expression of computing power and possibilities.

The tri-partite relationship between technology at a societal level, and organizational structures including ICTs at a meso or micro-level contribute to conditions for the objective and subjective work environment and the objective and subjective conditions outside of work. Organization as a 'structure' includes the legal and formal nature of the enterprise, while the objective work environment consists of the terms and conditions of the work environment. Objective and subjective conditions ('perceptions and attitudes towards the work environment' are mediated via what Bradley terms 'psychological variables' to create the particular subjective work or outside work and leisure environments.

We suggest that her model is improved by an elucidation of concepts associated with time and space sociology, though she does make an allusion to 'borderless networks' across time and space (Bradley 2006: 157ff.). The ability to communicate beyond the physical limits of the body or the building, enhanced by very fast ICTs, is one of the most revolutionary changes that has occurred in the modern area. Thus, hard drives store information that can be accessed at any time or any place and people can work across time-zones and the traditional physical limits of the workplace are broken up and created in new ways provide opportunities for work communication, anywhere, anytime, in any type of enterprise (Giddens 2000).

A model of such 'virtualization' incorporating Bradley's ideas can be developed by the integration of key insights from another Swede, Hagerstrand (1970; 1975). This insight has become of interest to geographers and others interested in tracking daily activity through different technologies and mapping their social effects (Gregory 1986; Gregory 1986) in which the 'friction' of time and space are reduced (Janelle 1969), as incorporated in to structuration theory, as described below. Bradley's schema could be modified to better represent both local and virtual existence.

Another way of representing the scheme, with a certain degree of simplification, taking into account the real effects of time-space activity is presented below. In this diagram, Bradley's circuit-diagram of social-technical relationship is reworked as series of social technical relationships of 'bundles', using Hagerstrand's language, that are also contained within the dialectic between her so-called objective and psychological work-home conditions. These are overall, structured through social norms and value systems that come to bear in relationship to societal labor market conditions. Significantly however, all this takes place subject to the conditions that time space relationships (the 'wrap around' time-space continuum) offer: the ability to work and communicate through time and space either in situ, or in virtual relationships with others that themselves, leave off into other sets of relationships.

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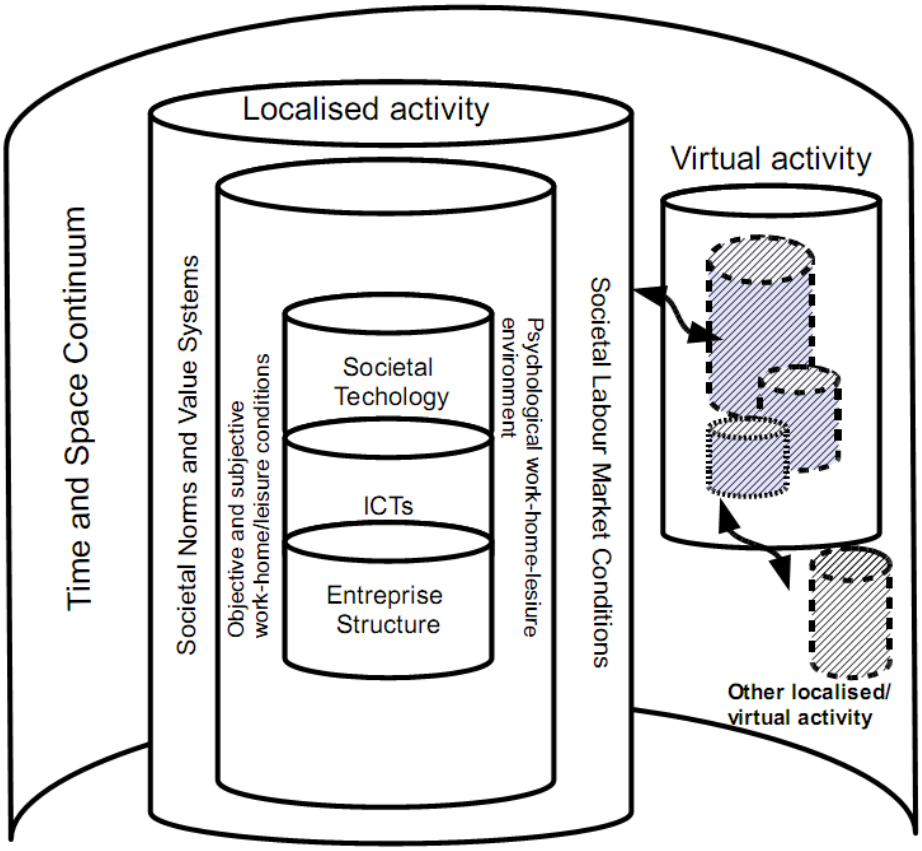

Figure 2: Bradley's schema, simplified & modified

Integration with Structuration Theory

Overview

Structuration theory has been enormously influential in Information Systems, with at least 225 articles identified as of 2003 in relevant journals (Jones and Karsten 2008). Of particular interest has been the adaptation of Giddens' framework for institutional analysis—or to adopt the language used in the discussion of Bradley— how all sorts of enterprises, large and small (as a kind of durable social institution), are constituted across time and space through knowledgeable human agency and the use of resources (Giddens 1984). The many elements brought together in the theory can be used to develop a rich picture of institutional dynamics and importantly, the relationships between the intersecting values, behaviors, and use of resources in different sorts of organizations, including the use of ICTs.

Thus,

> *The production or constitution of society is a skilled accomplishment of its members, but one that does not take place under conditions that are either wholly intended or wholly comprehended by them…The key to understanding social order …is not the 'internationalization of values', but the shifting relations between the production and reproduction of social life by its constituent actors. (Giddens 1976: 102)*

There are a number of key ideas that are of particular relevance to institutional analysis, and these provide a systematic way to contextualize Bradley's emphasis on psycho-social factors. Rather than these factors being 'objective' or 'subjective', they are in fact the product of ongoing agency and emergent action by people in their work and home environments. The three key dimensions of structuration—the structures of signification, domination, and legitimation, set in place the institutional character in which people work and live.

1. *Society*—social order—is reproduced though people's constant 'doing' of what they reproduce as ways of behaving.
2. *System,* as generic term, thus refers to the generated, reproduced relations, as well as *institutionally* regular social practices which exist across time and place.
3. Critically, the *structural properties of social systems are both medium and outcome of the process of structuration*. Thus, social systems cannot exist outside of what 'structures' exist in society. This is a complex issue subject to long-standing debate in sociological circles, and is beyond the focus of this paper, but the key point is that people have long been puzzled about what is this thing called 'society' and the 'system' which sustains it. It is a theoretical and practical impossibility to have 'objective' 'conditions': as if such 'things' exist as life forms of themselves. In fact, they are, as Giddens suggest, forms of reproduced social practice, subject to the profound influence of access to such things as economic or symbolic power.

Structural properties are primarily communicated and institutionalised through forms of communication, and secondarily, the use of resources as means of control and domination (authoritative and physical), as finally, the use of normative means (the 'rules of the game' in an organization or community via which particular behaviour is acceptable or not).

People take action, using their multiple structural principles or schema (many contradictory) at different levels of tacit or discursive knowledge, commitment, understanding, and social embeddedness (Sewell 1992). Embeddedness and systemness reflect the degrees of reciprocity or integration between actors in either co-presence or across time and space. Specifically, integration refers to the *degree* of interdependence of action, or 'systemness', somewhat similar to Marxist ideas of the hegemony of ideas and ideologies in different institutional settings. Such 'systemness' on a personal level can be gauged through both qualitative means, or quantitative research—the types of things outlined, in the psychosocial dimension, by Bradley.

Lewandowski, in his discussion of embeddedness in Bourdieu, defines the issue as follows:

> *Embeddedness is both the implicit matrixes of empirical relations in which actors find themselves and the interpretive location from which actors make such implicit ensembles of relations explicit in their everyday practices. The thematization of various forms of embeddedness—linguistic, cultural, economic, political, historical, and so on—is how actors are involved in and appropriate the structured world in which they live. Put in more Bourdieuean terms, thematizing embeddedness is the way we, as context-sensitive bearers of structures, explicitly 'make sense' of and 'play' the social 'games' in which we find ourselves. (Lewandowski 2003: 57)*

For example, families (of whatever composition), or organizations of all sorts establish their private practices, languages, symbolic gestures, and understandings of 'what goes', which take time for any visitor to understand, or which are hidden from the public. These, in fact, are Bradley's 'structures' which set the basis for psychosocial factors, which rather than being an external forms, are in fact, based on the interactions of actors in organizations and social systems who 'confront' each other on an ongoing basis, resulting in intricate and endemic negotiations about behaviour and activity.

The same perspective applies to the discussion of conflict and contradiction: we are not speaking of absolutes, but degrees of 'systemness' on both micro and macro-social levels (Giddens 1979: 76ff). These concepts provide a way of describing the specific intersection of signification, domination, and legitimation in organizations, and Giddens also speaks of the 'positioning' of actors in this intersection (Giddens 1984: 83ff).

Furthermore, structural principles, as 'mental' concepts are inherently transportable and transposable, and we constantly move and adapt them from one situation to another. Thus, for example, a person may leave one organization and join another, and, based upon her exposure to day-to-day organizational life, believe she knows how meetings are conducted and particularly, how decisions are made. However, the intersection of her assumptions (structural principles) about meeting protocols with the assumptions in the new organization may not always be a close match and lead to confusion until differences are resolved, or at least, the new assumptions (the structural principles) are absorbed and 'reproduced' by the new player in a way that is acceptable to others. In some cases, of course, the new player's interpretation of meeting and decision-making rules is not accepted and all sorts of difficulties can proceed from that. Thus, one set of assumed 'psychosocial' structures or principles may come into unfortunate conflict with another.

The *study of structuration* is consequently study of how these rules and principles are enacted, reproduced, and transformed using available resources such as ICTs and the degree to which they are embedded in co-present situations (such as the workplace), and across time and space. Bradley's psychosocial measurements provide a way of measuring this in terms of worker or personal 'fit' in particular situations. In contrast to the notion of 'objective' order or 'subjective factors—which Bradley uses, in a traditional dialectic way, to present how society is organised, structuration theory argues that it is neither one or the other—structures depend the enactment and ongoing negotiation (most often at a tacit, unspoken level) of interpersonal relationships at the institutional and familial level.

Resources in Structuration Theory

In Structuration Theory, resources are of two essential sorts: authority—the capacity to compel someone or something to perform in a particular way, and secondly, of a material sort—things that can be used or manipulated to achieve a goal.

Of particular interest to us are ICTs as a material means, as means of production and transmission of information and knowledge drawn upon by humans to create their organizations and social systems. Power is generated through activity, as actors draw upon particular resources to create particular things within and via the means of particular time/space locations (for example, computers, are used for teaching, and documents are both accessed and created synchronically and asynchronically at particular locations or 'virtually'), and the resources used to create these activity bundles (such as ICTs) can be stretched over time and space. In fact, Giddens refers to organizations as 'power containers' that can be drawn upon, and by extension, the power—the capacity to use the resources stored in a particular ICT--can also shape the outcome of such activity, for example, through particular software or formatting requirements (Giddens 1984). Thus, time and space are resources which are drawn upon in the creation of social order. For example, clock has become a device to structure and 'value' time under capitalism and the industrial mode of production (as in work time) The workplace as a place or locale which is inhabited for many hours a day, subject to the influence of constraining (or liberating) factors becomes imbued with particular characteristics and cultures—the domain of Bradley's psychosocial factors.

The Outcomes of Structuration

Consequently, all forms of social order, including the communities and organizations that are of interest to community informatics practice, consist of people who process and share (or contest) social rules and practice. They function through the interpretive schemes, the stored 'stocks of knowledge' (Giddens 1979: 83), provided by language and other media (such as through ICTs), which provide structure and meaning to communications through time and space (and are shaped by how time and space are constructed by human agents and machines).

Drawing upon particular resources (including the capacity provided by ICTs to achieve goals, and these resources can include the possibilities given by ICTs for all forms of communication, including virtual communication. Orlikowski, one of the most influential of Giddens' followers in the study of information systems and the use of ICTs, also suggests the idea of the *duality of technology,* incorporates the view that agency is instantiated through the interaction between human agent and technology. Technological artifacts engage the *interpretive flexibility* of agents: 'technology is created and changed by human action, yet it is also used by humans to accomplish some action'. The technological artifact can be seen as a 'set of features bundled together into an identifiable and bounded package', yet *in use*, it engages user intentions (Orlikowski 1995: 3).

Bradley (with her student Jansson) have highlighted a number of affective issues that are of great relevance to filling out criteria for analysing the different modalities of structuration which contribute to a stronger reading of the idea of interpretive flexibility

by human agents in conjunction with ICTs. The risk is that the difficulties associated with the proper management of these affective issues across time and space in the distributed organization or environment if not managed properly can lead to severe disruption of the subjective and objective factors that make for a productive environment.

Table 1: Derived from (Bradley 2006: 163-4)

To achieve sustainable communication and collaboration it is vital • that the team members get to know each other • to have fun together • to trust each other • to have an organization that supports their work • to have sufficient ICT support • to learn about team-building • to learn about conflict-solving • to have a team space • to learn communication skills • to prepare for problems that usually occur in the different stages of a team's life cycle • that somebody is giving the participants guidance and support to keep them on track • that somebody keeps the team motivated.

While Bradley and Jansson were referring in their specific study to distributed working and learning environments, we can reflect again on their argument and its relevance to community informatics environments.

> *Distributed working and learning environments are becoming more and more common in the world today. Areas that become harder at a distance are building trust and reaching sustainable relationships, since distributed teams do not have the same awareness of each other and receive fewer cues to help them 'read' situations and handle team-building, motivational problems and conflict...it has become essential to analyse how trust-building and psychosocial factors contribute to sustainability in these networks .*
>
> (Bradley 2006)

'Reading' situations is the task, as they see it, of good management, so that the workplace is happy and productive. From a structurational perspective, this 'reading' is actually the outcome of the negotiation of the dualism and interpretive flexibility of ICTs as the vehicle for multi-dimensional movement of structural principles around communication, norms, and the utlilization of resources. Thus, in the world of distributed ICTs that reach across time and space, the kinds of factors that are important for communication and collaboration depend upon the constant reproduction of shared assumptions (most often tacit) about communication and behaviour, using the structural resources that are inherent in any institutional relationship to 'recreate' known patterns and practices on an ongoing basis. This dualistic activity—in which ICTs are not just the means, but also the shaper of message—takes place not just in more traditional organisations such as those studied

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by Bradley and her colleagues, but in any circumstance in which people come together for purposeful activity in which ICTs are used. This, of course, includes those organisations which we have suggested are bound by a 'technology of care'.

Conclusions

Taking Bradley's psychosocial model as a 'reading', for a 'new kind of engineer' it can be considered, first as an empirically-focussed exercise to reveal many psycho-social factors that can affect institutional well-being, and that the study of ICTs in society demands a much broader range of understandings of social interaction that has been traditionally associated with Information Systems.

Second, Bradley's model can also be enriched when linked to the insights provided by structuration theory about how institutional behaviours are created and transmitted across time and space. This linkage also removes the Bradley model from a somewhat functionalist position to one that is more accommodating of human agency, innovation, change, and conflict. The 'instrumental ensemble' that comes to constitute an institutional system should be conceived of as a matrix or patterning of psychosocial factors that are both a result of—but also a vehicle—for the key dimensions of structuration, the structures of signification, domination, and legitimation, to set in place the regularly reproduced assumptions and ways of doing things that are recognised as a particular institutional or organizational culture.

From the perspective of Community Informatics, being able to empirically document organizational practice, including organizational health document situations is critical to changing practices in changes human services work, and the insight offered by Bradley offers a kind of documentary map for Community Informatics to follow in developing empirically-based responses to situations where the focus of interaction is not so much on the technology, but 'technology of care' interactions as significant forms of social practice that contribute to the good society and the advancement of citizens' rights and community problem solving.

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