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Critical Perspectives on Information Systems: An Impression of the Research Landscape

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Who does critical research speak to?

Klein and Hirschheim (1991) predicted that the future of information systems (IS) research would

> . . . belong to methodologies that are able to combine a high level of formal rationality with a sufficient level of communicative rationality under emancipatory conditions (p. 15).

Despite this prediction, not so long ago it could be argued that the dominant rationality in IS research was still rational and positivist and that to break away from this in order to adopt a different paradigm could lead to marginalization (Harrington, 1995; Brooke and Maguire, 1998). But has the pendulum now swung too far in the opposite direction? More importantly, is critical IS research of any real value outside of a limited field of application?

As was discussed in an earlier special issue of this volume of the *Journal of Information Technology* (Brooke, 2002b) definitions of 'critical' research have considerably broadened over time. One of the consequences of this is that many more research paradigms now include themselves within the label of 'critical inquiry'. This is often achieved through a call to pluralism. The paper opens by examining the rise of

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pluralism and issues of paradigm incommensurability. It then goes on to sketch the theoretical territory of critical research by considering three distinctive manifestations: critical systems thinking (CST), critical realism and critical post-modernism. This brief theoretical introduction is followed by detailed examples of empirical IS research conducted from each of the three perspectives and then reflects upon the impact of critical research on IS praxis. The paper closes by identifying common themes for critical IS research.

The rise of pluralism

The call to pluralism in critical research is perhaps today nowhere more apparent than within CST. Systems thinking claims to have moved a long way since its inception, from the general systems theory of Von Bertalanffy through the soft systems of Peter Checkland to the CST discussed by Jackson (2000) and others today. According to Jackson (2000), CST came into being in the 1980s and during the 10 years between 1990 and 2000 had 'come of age' (p. viii). It is against this backdrop that there seems to be a rising dominance of CST in critical IS research. One influence of this, as was argued in the special issue mentioned above (Brooke, 2002b), is an emerging tendency towards an increased use of Habermas in the specific area of critical IS and, indeed, it has been said that CST itself is partly grounded on the critical social theory of Habermas (Gregory, 1996).

Jackson (2000, p. 363) stated that the appropriate relationship between CST and emancipation became clearer once Habermas' three knowledge-constitutive interest had been embraced (Habermas, 1984a, b). Thus, the emancipatory intent became a universal search for improvement rather than self-emancipation. Lyytinen and Klein (1985) put it like this:

> We suggest that information associated with the use and development of information systems can be regarded as knowledge for social action (p. 209).

Jackson's (2000) measure of the extent to which CST has matured was its success in severing automatic connections with emancipatory approaches. Not only that but he suggested that this severing was a necessary step towards adopting pluralism and multimethodology use. Not all critical researchers would agree with this statement by any means (Saravanamuthu, 2002). Jackson (2000, p. 424) pointed out that CST,

having come of age, no longer seeks complete understanding. Rather, it now recognizes the limitations and partiality of understanding. He rebutted the criticisms of post-modernists (and others) that CST can be used unknowingly for managerial ends and instead framed it in terms of a highly reflective process. Gregory (1996) helped to clarify this potentially messy area of pluralism by building on some of Flood's (1990) earlier work and identifying various forms of pluralism. She discussed four approaches to management research: isolationism, imperialism, pragmatism and complementarism. Understanding the difference is particularly crucial to the conduct of critical IS research since the implications relate closely to issues of power and emancipation.

Isolationism adopts multiple perspectives, but sees each one as 'going their own way' and with no cross-fertilization between them. Imperialism tends to favour one paradigm above others and, although it can integrate different perspectives, will do so only if the central tenets of the dominant framework remain intact. Pragmatism (using Jackson's definition rather than Churchman's) uses whatever tool seems workable at the time. It is eclectic and has been accused of lacking rigour and grounding. White and Taket (1997) and Taket and White's (2000) form of pragmatic pluralism, which is called PANDA (participatory appraisal of needs and the development of action), throws up common concerns relating to pragmatic pluralism in general (Jackson, 2000). The method emphasizes doing 'what feels good' for the participants and the facilitators and could be exploited by some as a means for abrogating responsibility. More seriously, this has implications for ethical practice. Much is dependent on the ability of the facilitators and, as Taket and White (2000) themselves admitted, it is difficult to reflect critically upon issues of equitable participation and challenge existing power relations. These are serious areas of weakness for a method that claims to be critical in its approach.

The fourth area Gregory (1996) addressed was complementarism. She argued that complementarism has replaced the term pluralism in much of the systems literature. This is problematic since its obscures the possibility of other pluralist approaches. Central to complementarism are the aims of openness and conciliation (a reflection of Habermasian thinking) and attempts to integrate different strands of thinking. Jackson's main contribution to this, which was begun in 1983/1984, is his 'system of system methodologies' (SOSM). Through her discussion of SOSM, Gregory (1996) illustrated that Jackson's approach to pluralism was primarily complementarist. She identified a tendency for one perspective to suck in others that it investigates and for the SOSM to map situations

and then freeze-frame them. Implied here is that pluralism has to be able to respond dynamically to interactions in the research process. Thus, she proposed an alternative, discordant pluralism, the features of which are to view different theoretical positions as supplementing one another rather than competing and to promote learning through radical differences. This supplementary approach focuses on differences as much as similarities and is able to accommodate the tension so important to maintaining a critical stance. Jackson (2000) argued in favour of pluralism on the basis that it contributes to diversity – a strength rather than a weakness. Gregory (1996) recommended pluralism, but with careful attention to its particular type.

So where does this leave us? The concept of critical research can no longer be confidently assigned to a particular paradigm 'box' to the extent that the call for critical research is becoming partially obscured by the call to pluralism. This is a key issue since not all critical researchers believe that pluralism is possible at all. A major objection is the claim that different paradigms cannot be combined. This view was perhaps most clearly presented by Burrell and Morgan (1979) in their mapping of sociological paradigms. Since then the tension between the call to pluralism and paradigm incommensurability has become quite a feature of critical research (Jackson and Carter, 1991).

For some to deny paradigm incommensurability is to deny the potential for resistance. It can be seen as a 'soft option'. What choice do we make in the face of multiple perspectives? Jackson (2000) accepted that making choices remains a human responsibility and there is no escape from that, but he tended to suggest that more apparent choice equates with more assured choice. As Willmott (1993, p. 704) reminded us, this is not necessarily so because choice depends upon the ability to examine the underlying values of these choices critically and to reject all of them if they are found wanting. Anything else is a form of intellectual power play that runs counter to the central values of critical research, even mirroring the forms of power play reported in IS development. The potential for resistance is important to critical IS at all levels – theoretical, methodological and practical. From this perspective paradigm incommensurability remains an important plank in the radical theory project.

In an attempt to build bridges Willmott (1993) argued for a third way. In the tradition of Kuhn he acknowledged aspects of incommensurability, but pointed to the connectivity and continuity that characterizes theory development and suggested that efforts should be directed towards resolving anomalies within existing theories. Reed

(1993) also observed that organizational theory development was moving away from a focus on paradigm incommensurability towards what he called 'a more realistic and sober assessment' (p. 179) of mediation between competing perspectives. He concluded that making a useful contribution to future theory development would be dependent upon the ability to

> . . . tell a new story that critically engages with older narratives which will be in need of radical overhaul, but continue to speak to present problems and projected futures (Reed, 1993, p. 182).

The next section attempts to show the variety and breadth of theoretical territory now claimed under the critical banner and indicates how researchers are harnessing different paradigms in the cause of critical IS research.

A brief sketch of the theoretical territory

The discussion here is brief since more detail is given through the empirical examples that follow on. The examples chosen are intended to be indicative only. They represent three distinctive and contrasting approaches of critical IS research. CST and post-modern systems thinking occupy a middle ground between objectivity and subjectivity. Critical realism represents a more objective and rationalist route to critical research whereas critical post-modernism offers a more relativist approach.

Critical post-modern systems

CST has already been introduced and so here we focus on a specific development within it: post-modern systems. Whoever thought we would see the day when the words 'post-modern' and 'systems thinking' would appear side by side? Jackson (2000) noted that the rise of post-modernism in organizational research has forced systems theorists to think again. He traced common roots for post-modernism and the emancipatory systems approach:

> Postmodernism diverged from the Enlightenment tradition when it followed Nietzsche and Heidegger in pursuit of self-emancipation rather than Hegel, Marx and the Frankfurt School (Jackson, 2000, p. 334).

Jackson (2000, p. 348) produced a set of constitutive rules for the application of critical systems practice that sits within his pluralist frame of thinking and attempts to embrace post-modernism. Unsurprisingly, this involves adopting multiple perspectives and multimethodologies. Jackson (1997, p. 371) re-emphasized the importance of maintaining attention to the 'emancipatory option', but that it is not the job of pluralism or of CST to privilege a radical paradigm. Rather, meta-paradigmatic pluralism, he said, has the advantage of being committed to emancipatory potential without being tied to emancipatory practice, as this would be predetermining the outcomes. It is here that he found post-modernism an attractive option because it seeks to avoid meta-narratives and is focused on promoting diversity and difference. He added that

> Postmodern thinking has weakened faith in our ability to actually know anything for certain about how to design organisations and society (and quite right, too, given the disastrous experiments carried out in the name of certainty) . . . The emancipatory option must remain on the agenda (Jackson, 1997, p. 375).

However, if you do not adopt a realist stance to some degree then how do you know if you have been emancipated (Adam, 2002; Thompson and McHugh, 2002). Thompson and McHugh (2002) presented a cogent argument. If a researcher treats each and every tool or approach to inquiry as of equal value then this can lead to the very things which critical inquiry seeks to avoid: uncritical consumption and the absence of rigorous analysis and debate. Furthermore, Clegg (2001) and Thompson and McHugh (2002) drew our attention to the issue of democracy within the context of pluralism. Clegg (2001) reminded us that pluralism requires 'co-presence', that is the presence of the full range of stakeholders. Any absence from dialogue can be viewed as the result of repression. Thompson and McHugh (2002) concluded that the distinction between representation and reality must be made, otherwise the outcomes will be both unhealthy and undemocratic.

Critical realism

Thompson and McHugh (2002) pointed to at least two issues that critical researchers must address: the tendency for critical research to demolish without rebuilding and the partiality of competing theories. They

urged for rethinking and resituating within a more democratic context. They concluded that

> While a reflexive attitude is a feature of any critical approach, hyper-reflexivity in which everything is deconstructed or problematised, while solving nothing, is ultimately arid and self-defeating. There are still practices and a world to remake (Thompson and McHugh, 2002, p. 395).

Whilst they welcomed theoretical pluralism, they argued that complementarity is more of a realistic goal than synthesis. They identified the problem not as paradigm incommensurability, but as reality incommensurability. They saw grounds for dialogue and for the progression of knowledge, but in identifying an aspect of relativity that needs to be overcome they proposed critical realism as the middle ground between positivism and relativism.

Bhaskar's critical realism has been embraced for some time by critical researchers in the field of accounting, for example Power and Laughlin (1992). Some interesting debates have taken place recently in other disciplines. In operational research, for instance, Ormerod and Mingers (2002) debated and disagreed on what critical realism has to offer. One author (Ormerod) referred to a dictionary of philosophy in order to reassure himself that the concept of 'critical realism' is a tried and tested approach, but he found it wanting, while the other author (Mingers) warned us that devices such as dictionaries tend to be teleological and represent only what has already become concretized as history.

One reading of this exchange is that Ormerod found critical realism 'a bridge too far'. His response was ironically reminiscent of the time when soft systems methodology emerged and systems thinking moved (was dragged?) towards the more subjective end of Burrell and Morgan's (1979) framework. So whilst some people view critical realism as too relativistic others, like Thompson and McHugh (2002), see it as a way of bridging a relativistic divide.

Critical post-modernism

To an extreme relativist the existence of anything 'real' independent of sense experience and the concept of closure in interpretation are insupportable. The critical version of post-modernism does not go this

far, but it is certainly more relativist than critical realism. Nevertheless, Boje (2001) proposed critical postmodernism as being able to overcome the sort of problems of relativity that were highlighted by Thompson and McHugh (2002).

Boje (2001) theorized critical post-modernism as a mid-range theory exploring the middle ground between epochal post-modernism (or post-modernism à la Hassard and Parker (1993)), epistemological post-modernism and critical modernism. Boje (2001) drew our attention to the 'dark side' of post-modernism that is missed by non-critical approaches. Post-modernism is inherently ambiguous and plural. He pointed out that interpretivism (or social construction theory) is often confused with post-modernism and he warned that this is dangerous since it leaves out any consideration of the material conditions of political economy, even to the extent that some post-modern approaches effectively result in 'carnivalesque resistance'. In other words, by totally rejecting any form of grand narrative and negating the possibility for any 'real' material condition, there is a danger that, instead of engaging with the issues and seeking to transform conditions, one simply attempts to find what Boje (2001) called 'a more festive path' through the quagmire. Boje's (2001) warning and his search for a middle way is certainly reminiscent of Thompson and McHugh's (2002) reservations. They observed that

> A multi-paradigm perspective is primarily influenced by postmodernists trying to draw back from extreme relativism and seek greater dialogue (Thompson and McHugh, 2002, p. 389).

Thus, critical post-modernism is proposed as a way of bridging the relativistic gap between postmodernism and critical theory (Boje, 2001).

The contribution of empirical research

All three theoretical perspectives so far have claimed to be able to address the substantive issues of critical research, particularly emancipation and power relations. This section looks in more depth at examples of empirical work that have been conducted from each of the perspectives presented here and sees these claims in action. It indicates a response to the call from Alvesson and Deetz (2000) for more empirical work and provides an opportunity for greater dialogue (Thompson and McHugh, 2002).

Critical systems thinking: pluralism, post-modernism and platforms

Between 1997 and 2000 Carrizosa (2000, 2002) conducted research that adopted a pluralist and multimethodology approach including aspects of postmodernism within a gas turbine manufacturing company in the UK (KGT). His work is a good example of what Jackson (2000, p. 417) described as critical systems practice, where different techniques are applied in the service of methodologies that reflect different paradigms and are employed as appropriate to individual circumstances.

Throughout the duration of the research KGT were experiencing high levels of churn due to changes in market share and, in turn, changes in ownership and directorship. Carrizosa (2000, 2002) argued that a pluralist approach helped him to be flexible and responsive to the levels of change experienced by the participants and their impact on the direction of the research as it unfolded. An action research design was adopted and all participants in the study were referred to as 'co-researchers'. The emphasis was on participation and the open sharing of views. Carrizosa's (2000, 2002) main role was that of facilitator. Much of his success in enabling individuals to overcome reservations about politics and power play were down to his gaining their trust and confidence over an extended period of time. This point cannot be over-emphasized given that he recognized the potential for political, cultural or practical constraints in limiting the range of methodologies used and thereby the integrity of the pluralism (Carrizosa, 2002, p. 4). The research constituted engagement in what he termed 'informed pluralism' by virtue of the facilitation towards the co-researcher status of all the participants (Carrizosa, 2000, p. 11).

There is only space here to present a brief vignette of the total research, but fortunately it can be broken down into five subprojects. We will focus on the final three of these subprojects: the thinking space, the book and the walls workshops since these demonstrate the pluralist and post-modern nature of the research more obviously. Carrizosa (2000) coined the term 'platforms' for describing the intellectual and reflective organizational space that these three devices opened up for the participants.

The thinking space was both an activity and a way of doing things. It provided a space within which the co-researchers could have structured conversation and engage in equal participation. A range of techniques was used including rich pictures, root definitions, conceptual models, viable systems methodology, systems metaphors and system dynamics.

The book emerged from this engagement and proved to be a useful way of addressing power relations. The book was created in an interactive way and consisted of writings by the participants of their experiences in implementing new organizational structures. In writing the book the co-researchers were objectifying an organizational theory about the company itself and this newly co-created theory of the firm propelled the company into further action grounded in the diverse and subjective experiences of the individuals. In this sense it was a new way of standing out in contrast to senior management views of the *status quo*. The walls workshops were described as follows:

> On walls, accessible to all actors, systems diagrams and various visual representations were set up as outputs of continuous interaction among participants . . . Once an issue was raised natural conversation took over which led to a WW [walls workshop] if participants thought it appropriate. All this was intended to be founded on the spirit of collaboration, commitment and within the framework of a serious and organised effort, whose progress was visualised on the wall at all stages. Using this device the process was available for scrutiny, validation, revision and feedback (Carrizosa, 2000, p. 8).

Carrizosa (2002) subscribed to Gregory's (1996) discordant pluralism and was careful to guard against an imperialist subsumption of perspectives during his application of methodologies. Indeed, Carrizosa (2002) claimed that

> . . . the TS [thinking space], the Book and the WW [walls workshop] became buffers where reflection on the use of methodologies and paradigms resulted from interaction among co-equal actors. The rule of co-equal actors encouraged participants regardless of their formal position, their predominantly engineering background and somewhat technocratic culture, to temporarily reflect about and try what other tools, methods and methodologies pertaining to different paradigms could offer in terms of approaching a particular problem situation (p. 9).

The post-modern and critical values underpinning this work are manifested in several ways. The highly contingent, open and emergent nature of the platforms as devices for communication reflects a post-modern view of emancipation and improvement. Jackson (2000, p. 420) noted that the creation of the thinking space was based on a generic

interpretive methodology, although it gave equal prominence to emancipatory concerns. It should be noted though that, whilst the learning achieved by the co-researchers constituted an emancipatory outcome, the project design focused on emancipatory intent, i.e. the research recognized that emancipatory outcomes could not be predetermined. In addition, the platforms encouraged creativity and diversity and 'ethical alterness'. Before the research took place the organizational members were not aware of the 'human activity system' as a matter for research or for daily reflection. Subsequent to the creation of the platforms the organization did become a research matter to be reflected upon. It also enabled them to challenge power relations and to encourage diversity as well as to have 'fun' (Carrizosa, 2002, p. 16). Carrizosa (2002) noted that the 'joy' of embarking on platforms as a device lay not in implementation *per se,* but in opening up possibilities for sensing and creating new ones to follow. He seemed to suggest that the research was an ongoing journey of new learning.

An important aim of this research was to generate learning amongst the participants, even those who were not directly involved in the projects themselves. The multiple perspectives adopted were said to have enriched communications overall. Carrizosa (2002, p. 10) went on to claim that a pluralist, multimethodology approach where paradigm incommensurability is managed could result in double loop learning and that interventions such as the platforms described here were an effective way of doing this. It is important to note that the co-researchers considered the platforms to be a local improvement in their own right (Carrizosa, 2002, p. 14). Ultimately, in critical tradition, Carrizosa (2002) reflected that any notion of improvement must depend upon the actors. So it is significant to note that KGT are still using platforms today.

Critical realism: emotional labour and the new workplace

Taylor's (1998) work on emotional labour in the service sector makes an interesting if somewhat disturbing read. He conducted ethnographic research within a telephone sales operation of a British airline and applied labour process theory in order to make sense of his findings. One of his major conclusions was that emotional labour is a key feature of the new service sector workplace. Following Hochschild (1983) emotional labour is defined here as feeling management where it is performed as part of paid work, where it serves the interests of the

employer in capital accumulation, is undertaken during social interaction with clients and where there is some managerial supervision or measurement of performance.

Technology was central to the performance of work at the airline – all staff worked with a headset, a telephone system and a computer system. The aim of the job was to convert as many calls as possible into airline bookings. The role of emotional labour is probably best illustrated here in the term 'customer intimacy' which was used by the head of telephone sales worldwide for describing the 'most important goal' (Taylor, 1998, p. 88). Customer intimacy meant being proactive – getting to know the customer so well that their needs could be anticipated and exceeded rather than just responded to in a reactive way. Management monitored work performance through a 50:50 split between hard targets (e.g. statistical analyses of call conversion) and soft targets (e.g. good teamwork). The latter was difficult for them to define and the former was seen as a benevolent system that encouraged staff to deliver business through their own personal skills development. The measurement of these targets determined the performance-related pay of individual staff.

The research identified a contradiction between management and staff perceptions of the nature of the work as well as inherent contradictions between the airline's espoused theory and actual operator practices. Management described the nature of the work as encouraging individual 'autonomy' and 'discretion' whereas staff reported an ethos of strict monitoring (mainly tapping) of calls taken and an official policy of standardization of technique and style. An electronic managerial control system was used for individual supervision and evaluation in order to ensure that any divergence from prescribed policy was of a 'positive' nature. Yet when interviewed the supervisors emphasized that staff were encouraged to be themselves and, indeed, that to do anything else would appear false and discourage customers. However, management's account does not sit well with the accounts of the operators. As one of them put it

> They either want us to be natural when interacting with customers or they don't, they can't have it both ways (Taylor, 1998, p. 95).

There was also a suggestion from the staff that the customers did not like the style that the operators were told to adopt.

Hochschild (1983) identified two forms of emotional labour: surface acting and deep acting. Surface acting refers to the act of displaying emotions to others that one does not feel, whereas deep acting suggests

that it deceives oneself as much as others. Deep acting is shaped by managerial control and can even impact on the personality of the individual employee. In Taylor's (1998) research call operators employed both types of acting in the course of their emotional labour. One interviewee expressed deep acting when they reported that

> . . . a lot of people keep telling me I've actually mellowed since I came here so it's done something for me (Taylor, 1998, p. 94).

Staff were trained to treat customers in a certain way, most notably to 'always feel sorry for the ignorant customer . . . put sympathy on to him and not yourself'. And as another put it

> You've got to be on your guard all the time . . . I suppose in some ways you can't just be yourself (Taylor, 1998, p. 93).

However, the research also revealed that in many instances the call operators did not comply with this policy. They had devised a way of assessing whether or not their call was being tapped and, if not, slipped back into their own natural ways. A member of staff admitted that

> . . . when I am positive she is not listening, I have been really short with bad customers, it's a great feeling (Taylor, 1998, p. 95).

This suggested that even the surface acting was only displayed when managerial monitoring took place. It also suggested that Hochschild's (1983) theory was too simplistic. Examples were found of sophisticated surface acting and of deep acting for pragmatic purposes (i.e. deep acting which was not fully self-deceptive).

Taylor (1998) argued that labour process theory could inform studies of emotional work in the electronic workplace in at least four ways. It reveals the extraction of surplus value, it shows the capitalist 'logic of accumulation', it reveals the control imperative of management and exposes the underlying antagonistic nature of capital–labour workplace relations. None of this will surprise anyone familiar with labour process theory. However, some other interesting aspects were also revealed.

The control of people's thoughts and feelings was shown to be of a normative type (the electronic monitoring systems), but it was also shown that this control was partial, incoherent and contradictory. Even where behaviour would seem to suggest to management that staff were complying with official policy, in practice this was not always the case.

Furthermore, this study also illustrated that emotional labour was a gendered phenomenon. Indeed, Hochschild's (1983) work in the USA showed that women carried out a high proportion of jobs (between one-third and one-half) that were characterized by emotional labour.

Finally, Taylor (1998) set the findings of his own research against the backdrop of a number of other similar studies and concluded that contemporary electronic workplaces serve to shift the focus away from the technicalities of the work to the actual way in which the work is performed. At a superficial level it could be argued that this has long been established, but then this interpretation would miss at least two other points. The first is obvious and has a long tradition: that techno-logical intensification can just as easily lead to deskilling. The second is less obvious. In a workplace where employees have been 'empowered' or 'informed' through technology, then managerial expectations are both raised and shifted to focus on areas that are less tangible to evalu-ate. The performance of a less tangible labour effort (as in emotional labour) requires more subtle forms of management and more diverse forms of resistance on the part of the workers (Ackroyd and Thompson, 1999). Hard-edged analysis will not suffice in such contexts. Research approaches that can somehow 'take account of' the nuances of diffuse workplace interactions are not enough. We also need approaches that are purposefully driven to expose issues of power, autonomy, emancipa-tion and gender. Critical approaches contribute to meeting that need.

Critical post-modernism: consultancy as storytelling

The contribution that post-modernism can make to IS practice has been recognized by a variety of writers. The example that follows focuses on the practice of consultancy and views it through the lens of organiza-tional storytelling. Organizational storytelling can be viewed from a less radical (critical) perspective or a more radical (critical post-modern) per-spective. From the less radical viewpoint stories are elaborations upon actual events, wish fulfilments and expressions of deeper organizational and personal realities. From the more radical perspective, everything is discourse and narrative and there is no distinction between fact and fantasy or between text and context. It is this latter perspective which will be considered here. As Boje (1995) put it

> the storyteller and story listener are co-constructors of each story event as a multiplicity of stories get enacted simultaneously in a mul-tiplicity of sites, of brief encounter, in and around organisations (p. 5).

Organizational storytelling can be seen in practice at three different levels: as a way of organizational sense making, as defining management and as business itself. The research by Clark and Salaman (1996) on consultancy falls into the latter category. They argued that management consultants successfully satisfy and retain clients by telling 'strong stories'. The unregulated nature of management consultancy means that the customer's ability to assess the value of a consultancy's service prior to purchase is crucial. They proposed that the management consultancy industry is characterized by the following.

1. Intangibility (of the product).
2. Social interaction (between consultant and client).
3. Heterogeneity (of consultancy types).
4. Perishability (products are time and context specific).

The short-term and sporadic nature of the client–supplier relationship means that clients are often first-time buyers and, therefore, clients do not know what they are getting until they get it. Furthermore, consultancy knowledge is a social product and impression management is very important. This inherently ambiguous nature of the consultancy process lends itself to a focus on the manipulation of images and symbols. Clark and Salaman (1996) pointed to the production of organizational myths and in particular the creation of managers themselves into 'mythical manager heroes' (e.g. leader, strategist and saviour).

They discovered two types of consultancy story building: the solving of mysteries and the deconstruction of apparent certainties.

> Consultants' knowledge offers representations of organisation structures, processes and purposes to managers. Within these representations is an identity for managers themselves – a positive description stressing the importance of the manager's role (Clark and Salaman, 1996, p. 179).

Consultants demonstrate mastery and credibility through their ability to reduce uncertainty and through their competence in managing meanings, particularly in an economic (concise and resolute) way. This reflects organizational experience of what they call 'information anxiety' and the dominance of the resource metaphor in business. Consultants may appear to reflect the real world as experienced by the client manager, but equally it could be argued that the consultant is regulating what management do because management are working within the textual framework described by the consultant. The work of

management consultants therefore not only constitutes organizational reality, but also constitutes managers themselves. Consequently, the process of management itself becomes redefined through the storytelling activities of the consultant.

Technology (particularly computers) features prominently in organizational stories. A number of research projects have shown this. Technology appears in organizational stories as physical objects, as living beings (through anthropomorphism) and as a resource or tool (a particularly powerful metaphor). Our everyday language suggests that we view computers as if it had agency (human qualities of action). In contrast, organizational stories often stress the importance of remaining in control of computers, of avoiding becoming their servants and of retaining skills and experience. Power and control are important themes here.

> If power is one of the hidden agendas of computer stories at the workplace, especially of stories recounted by experts and managers, then discomfort and apprehension are the underlying message of many. It is interesting to note that in no stories did the computer feature as the friend of the user ('my old and trusty PC') nor as party to heroic deeds. At the heart of these apprehensions may lie the sense that computers are already too clever and too powerful to be controlled by humans, while at the same time we have become too dependent on them to be able to function without them (Gabriel, 2000, p. 167).

In contemporary organizations stories have to compete with other forms of narrative, particularly against 'information' and 'data', but also against 'facts', jargon, numbers, images, arguments, opinions and so on. Stories and the accompanying engagement and meaning negotiation begin to shrivel away or are silenced (Brooke, 1994, 2001). People become deskilled in narrative ability and become information handlers not storytellers. All this highlights the potentially fragile nature of experience. It also highlights the interesting potential for critical postmodernism in IS research. We will return to some of these issues when we consider IS praxis and the work of Lash (2002).

How does critical research impact upon actual information systems praxis?

We now go on to consider three key issues that critical inquiry has illuminated in relation to IS praxis: the role of the IS professional, the nature of systems development and the changing nature of organizational life

itself. Once again, each example broadly reflects the three approaches of CST, critical realism and critical post-modernism.

Information systems professionals claim too much

It has been suggested that practitioners regard systems thinking as too abstract for practical use so it is worth considering here a contribution from the CST camp that would seem to refute this. According to Ulrich (2002) critical systems heuristics was first developed in Berkeley in the late 1970s. Heuristic is taken from the Greek *heurisk-ein* meaning to find or discover and, thus, heuristics refers to the practice of discovery. Ulrich's work on critical systems heuristics was the first major text in the 1980s to present an emancipatory systems approach and it more or less plugged a gap in existing systems thinking, providing possibilities for action within coercive power situations where soft systems thinking had not (Jackson, 2000). Ulrich (2002) claimed that his work represented an independent strand of CST in which 'critical' implies both an emancipatory and a reflective effort. He attempted to work out the generic critical significance of the systems idea for reflective practitioner practice and presented a thesis that is highly relevant for critical IS development and critical practice in general (Ulrich, 2001a,b).

The essence of Ulrich's (2000, p. 25) argument is that what we observe and how we evaluate it depends on how we bound the system of concern. He therefore constructed a set of boundary categories. He argued that 'improvement' is an eminently systemic concept since, unless the system of reference is known, suboptimization will occur. Using Kantian logic he argued that no statement about boundaries could be made without certain assumptions concerning what does and what does not count in a situation. Therefore (unlike Kant) he derived his categories from the views and intentions of the social actors themselves that constitute the system of focus rather than from Aristotelian formal logic. Ulrich (2000) constructed 'an eternal triangle' to show the dialectical relationships involved. He mapped out three elements: boundary judgements (the system under concern), values (evaluations) and facts (observations). The decision about which stakeholders should be involved in any decision situation is itself a boundary judgement that needs to be subjected to scrutiny and this highlights the self-reflective nature of the approach. In his paper he worked through a practical example in order to show how the concept of boundary judgements can be applied in practice:

> The emancipatory employment of boundary judgements aims to make visible the operation of power, deception, dogmatism or other

non-argumentative means behind rationality claims. It accomplishes this purpose by creating a situation in which a party's unreflecting or even consciously covert use of boundary judgements becomes apparent (Ulrich, 2000, p. 259).

Ulrich (2000) argued that professionals (and others) tend to 'claim too much' and do so as an unreflective consequence of assuming their expertise is not limited by their particular knowledge of a situation. In other words, professionals tend to appropriate discursive space by exaggerating (consciously or unconsciously) their expertise. This observation is not limited to CST (Brooke and Maguire, 1998). Nevertheless, Ulrich went on to say that CST has shown that there is a deep symmetry of all claims to knowledge and rationality, irrespective of whether or not they are professionally derived. This enabled Ulrich to move beyond the professional–lay divide.

He was not arguing against professionalism *per se,* but against contemporary notions of professional competence that, he argued, tend to put members of society in a situation of incompetence even as they are meant to serve them. Thus, he suggested that the ultimate source of legitimacy should lie with the social actors. He proposed that in any situation both 'professionals' and 'citizens' could contribute a set of core competences to reflective practice. In this way he proposed a methodological route to professional practice. This is clearly pertinent to the field of IS. Nonetheless, Ulrich's work focused on exposing the exercising of power rather than on theorizing the nature and construction of power itself. This may be why Jackson (2000) classified critical systems heuristics as 'simple coercive' within the SOSM framework, i.e. as only able to deal with situations where there are obvious imbalances of power rather than where power relations are less clear. It is important to note though that Ulrich (2002) himself rejected this method of classification. Indeed, he proposed that the core methodological principle of boundary critique is a generic principle that is indispensable not only for 'coercive' problem situations, but for all problem-structuring and problem-solving processes. Technological systems design is a classic site in IS research for exploring problem situations. It is to this activity that we now turn.

Information systems development is still an unholy alliance

Systems development activities are often overtly interest-based in nature and, therefore, provide fertile ground for academic inquiry into one of

the central concerns of critical theory: power relations. An example is the 'unholy alliance' that can be struck between the interested parties during systems development (Brooke and Maguire, 1998). The unholy alliance is a form of technical subterfuge whereby technical experts, in an attempt to compensate for their own lack of change management expertise, project a false image of their knowledge and its representativeness of the wider context. This phenomenon is referred to as 'virtual know-how'. In essence, virtual know-how is produced when the experts (systems developers) promote the efficacy of their own territory at the expense of exploring less familiar territory, even though the latter could be more conducive to reaching a 'successful' conclusion to the project.

Technical professionals have been criticized occasionally for producing solutions that are looking for problems (embodied in the notion of technological determinism), but they also occasionally produce problems as well. The interest-based nature of systems development means that there may be competing agendas amongst groups with each group wanting to ensure that the system is successful in their own terms. This can lead to the perceived advantages of the system being promoted while potential disadvantages are underemphasized. This dishonest or unholy alliance between different stakeholder groups (for instance internal users, systems developers, consultants/ suppliers, external clients and academic researchers) can result in major problems, with systems remaining largely hidden until they have been implemented. A rationality is adopted by the different groups as a common ideology, not so much because it is perceived as a natural reflection of the way things are, but because it serves to hide the use of power and legitimates and obscures the actual choices that are taking place (Pfeffer, 1981). Smith (1989) summarized it well when he said

> There are many prescriptions as to how work ought to be organised and how managers ought to manage the introduction of new technology. Yet the thoroughly rational management strategy for technical change has proved to be an elusive chimera (p. 377).

The unholy alliance is not struck between groups of equal power, quite the reverse. If Pfeffer's (1991) warning concerning rationality as a mask for the actual use of power and choice is accepted then it is essential that critical IS research strives to promote self-awareness and enable the assumptions that underpin management goals to be made more explicit. If this is not attempted then consultants and technical experts could become evangelists and spin doctors for a technocratic

management. This warning no less applies to researchers. Willmott (1993) urged critical researchers to be vigilant against a potential lapse into uncriticality when he said that

> By becoming more practically reflexive about the conditions of theorising, we move away from an external and seemingly authoritative form of analysis and towards an immanent, self-consciously situated form of critique that places at issue the categories in terms of which it initiates critical play (p. 708).

Reflexivity is an essential element of conducting critical research, but it requires intellectual and organizational space. The inter-relationship between this need and the nature of the contemporary workplace is well explored in the next example.

Technological forms of life

Critical studies can shed light on changes in the very nature of daily existence itself.

The example discussed here concerns a broadly critical post-modern view of technology and the workplace. In his new book *Critique of Information* Lash (2002) discussed a phenomenon not too dissimilar to Parker and Cooper's (1998) cybernetically inspired concept of cyborganization. Lash (2002) differed from Parker and Cooper (1998) mainly in that he saw humans not so much as cyborgs but as an organic–technological interface. In declaring ourselves 'unable to function' without our personal computer, mobile telephone, etc. we are reinforcing this view of ourselves. We operate as

> a man–machine interface – that is, as a technological form of natural life – because I must necessarily navigate through technological forms of social life (Lash, 2002, p. 15).

We have to navigate through technological culture and, since this is constituted in 'at a distance' forms of life, then we also become life at a distance. We cannot achieve sociality in the absence of technological systems, except by interfacing with communication and transportation machines. Taking this further Lash (2002) drew in developments in human genetics in order to show how even details of our internal nature and bodily workings are externalized and stored in information databases. Through this process of being opened up we become

part of a wide-open system of nature and technology, open to flows of information and communication.

The biggest implication of this proposition is that, whereas positivist researchers would argue for epistemological–ontological dualism, from Lash's (2002) perspective everything becomes flattened out into a radical monism of technology. The proposition of technological forms of life negates positivism's subject–object divide in favour of a form of empiricism where the observer is not fundamentally different from the observed. This echoes the philosophical position expressed by some critical theorists and postmodernists. Indeed, in a previous work Lash (1988) described post-modern social theory as a process of de-differentiation. In his latest thesis, the shift is away from the transcendental and philosophical phenomenology of Husserl and Heidegger towards the empiricist phenomenology of Garfinkel. The human actor is not substantially different to the actions they observe (cf. the parity within actor network theory of human and non-human 'actors'). Deep meaning disappears to be replaced by empirical meaning and this empirical meaning becomes everyday and contingent. In other words, meaningful knowledge is not separate from action but is intrinsic to it. We gain knowledge in a reflexive manner, but the reflexivity is of a particular type – it is a fusion of theory and practice. Theory is incarnate actually within the very act of practice itself. Sense making is no longer a private, personal act. Sense making is now for others and becomes a process of 'account giving', of 'glossing' and of communication. Implicit in this is an accountability and responsibility within each context or community. You give an account and you are then accountable for the consequences.

A major implication is that there is no longer any 'outside' (see Cooper, 1990), no external place for reflection and critique or representational space (Brooke, 2001). The suggestion is that we can no longer 'critique' as we used to – we can only 'articulate' processes and objects and attempt to modify boundaries (cf. Ulrich, 2000). Critique must be interior to the information not external to it and (given the fusion of thought, act and meaning) as was noted 'there is no time out' (Lash, 2002, p. 201). Lash (2002) concluded that power no longer works through discourse and ideology, but instead is manifested in the immediacy of information and communications. Power no longer works through reflective intellect or the unconscious but through tacit knowledge. The organism itself has become a self-regulating IS. In technological life those who work in scientific and technological centres (such as laboratories) will play a very significant role. The overall message is

that technological life forms are not so much based on the notion of exploitation but exclusion. Social standing will accrue to those who have rights of access and intellectual property. This is a theme reflected in the now well-established term 'digital divide' (e.g. Remenyi, 2002; Sauer and Willcocks, 2002).

Lash (2002), in citing the human genome project as an example, showed how the incorporation of technology into our daily lives not only results in limited access to resources for some people and their accompanying disenfranchisement but also to our own commodification in the process. The accumulation of capital and the extraction of emotional labour illustrated in the earlier case examples are taken a step further in Lash's (2002) account of the accumulation of life forms. We might benefit here from a sharp reminder that the word 'emancipation' comes from the Latin for 'to release' as in to free a person from some form of constraint. Unfortunately, Lash's (2002) description suggests that we have nowhere left to go. This state of affairs suggests the need for increased vigilance and an increased role for critical research, not its redundancy.

Conclusions

Whilst not purporting to be a comprehensive literature review, this paper has attempted to demonstrate the range of contributions which critical approaches to IS research and praxis can make. It has been noted that many research paradigms now identify with the call to critical inquiry and that this is often achieved through a pluralist approach. Glancing across the critical research landscape has reconfirmed the impressions given in the special issue mentioned earlier in the paper (Brooke, 2002a) that the central themes of concern remain power relations and emancipation. However, the rise of pluralism has brought to light concerns about a loss of intellectual tension where one paradigm comes to dominate another and where loss of resistance results in insufficient attention to power relations such that voices are ignored or silenced.

Several other common themes have emerged in this review, notably the appropriation of feelings and humanity itself and the growing need for representational space. Against the backdrop of such workplace technology analyses such as those of Taylor (1998) and Lash (2002), we might view the current popularity amongst managers of Goleman's emotional intelligence and Zohar's spiritual intelligence with much scepticism. The recent surge of interest in knowledge management could conceivably lead decision makers to believe that organizations

must apply technology in such a way that it can extract, objectify and commodify what makes us human in order to achieve business 'success'. Such a possibility (whether or not exaggerated) gives some insight into why critical IS research is necessary and critical knowledge management research is already demonstrating its potential (see Swan and Scarbrough (2001) for a good overview).

All this serves to reinforce the importance of opening up intellectual and representational spaces within organizations (Brooke, 1994, 2001; Clark and Salaman, 1996; Carrizosa, 2000, 2002, Lash, 2002). This paper suggests that critical approaches to IS will be more sensitive to identifying the need for such spaces as well as better equipped to help create them. If all this sounds like a rather pessimistic justification for critical research perhaps we can take some words of comfort from the phenomenologist Merleau-Ponty (1964) who wrote extensively about the primacy of perception. Building upon Weber's ideas he said that in the 'cultural sciences' there can be no system and no end. Unless some 'sclerosis' of life disaffects us, there will always be changes, new questions and disparate points of view, on what constitutes reality (Merleau-Ponty, 1964, p. 206). The overriding message of this paper is that critical approaches to IS have a valuable role to play in keeping up this momentum – even if occasionally accused of being the irritant rather than the pearl.

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