Epoch, Epistemology and the Virtual Organization

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Abstract

This paper engages with contemporary discussions of 'the virtual organization'. Starting with some influential accounts that were published in the 1990s, the paper highlights the continued significance of control rationalities in the increasingly dispersed and disaggregated organizations of the advanced industrial societies. The paper also takes issue with the 'epochalist' tendency to equate virtuality with the 'end of organization', and it puts the case for a more historically situated view of technology in 'post bureaucratic' or 'virtualised' organizational settings.

Keywords

Virtual organizations; networks, information technology; epochalism organizational control, bureaucracy; post bureaucracy

Introduction

The view that new technology is fundamentally affecting work organisations has been a rich source of controversy and comment over the last thirty years. Many accounts of contemporary restructuring have been influenced by the idea that production has become more 'disorganised' (Lash and Urry 1987). This view is closely related to the belief that we are seeing a paradigm shift away from bureaucracy towards disaggregation and a putative 'end of organisation' (Kanter 1991; Quinn 1992; Handy 1995; Harris and Hopfl 2006; Clegg et al 2011). This paper provides a brief introduction to the debate on the virtual organization, identifying two aspects that deserve further investigation. First, the virtual organisation has been represented as a historically significant paradigm shift. This produces a strong sense of *déjà vu* in the mind of the critical observer, and begs the question of how far new and more disaggregated forms can be seen as a significant departure from existing models of organising. Second, virtual organization concept has been endorsed by a wide variety of commentators including IT professionals, business academics, sociologists and a new generation of computer intellectuals or 'cyber gurus'. The paper offers some theoretical reflections on information technology, organization and the putative 'end' of bureaucracy, presenting a series of counterfactual examples to suggest that what has changed is not bureaucratic rationality *per se* but the *locus* of bureaucratic control within and across what have become increasingly disaggregated formal organizations.

Part 1: Defining the virtual organisation

Several authors have sought to establish a comprehensive definition of the virtual organisation. Barnatt (1995) identifies virtuality with malleability and transient work patterns. He also argues that the virtual organisation has no identifiable physical form and that its boundaries are defined and limited only by the availability of IT. Barnatt also argues that technology allows the form to dispense with bureaucratic rules and contractual relations. Davidow and Malone (1992) emphasise the malleable and amorphous form taken by virtual organisations. The boundaries will be ill defined so that:

> To the outsider it will appear almost edgeless with permeable and continuously changing interfaces between company, supplier and customer. From the inside the firm will be no less amorphous, with traditional offices, departments and operating divisions constantly reforming according to need. Job responsibility changing interfaces between company, supplier and customer. Job responsibilities will regularly shift, as will lines of authority - even the very definition of employees will change, as some customers and suppliers begin to spend more time in the company than some of the firm's own workers. (Davidow and Malone 1992: 5-6)

Jackson and Quinn (1996) argue that moves towards the virtual organisation result from 'two mutually supportive developments'. Corporate restructuring (see, for example, Kanter 1998; Quinn 1992) involves changes in the ways in which organisational sub-units and functions are fitted together within the corporation. This can be located in more theoretical work on the ways in which differential contractual and control structures may be appropriate for different sub-units (Ouchi 1979; Williamson 1865; Sako 1992). The second aspect cited is overtly technological and is centred on the potential innovations which take place at the conjunction of technology and organisation. Research on the virtual organisation has received renewed stimulus from developments in information and communications technologies (ICTs). ICTs allow temporally or spatially dispersed organisational functions, work teams, or individuals to work on a common project or work task. Teleworking, which is closely associated with home working, subcontracting and franchising, has typically been confined to lower-order tasks. Leading commentators were confident, however, that the virtual forms allowed by more advanced communication technologies would include significant numbers of professionals and 'knowledge workers'.[1]

The virtual organisation as a paradigm shift

Accounts of the virtual organisation are almost invariably concerned with defining the virtual organisation in contradistinction to earlier forms, and they are often constructed around the assumption that the virtual organisation should be reviewed as an emergent new paradigm. Information technology as associated with the creation of new business opportunities, marketisation, de-bureaucratisation, value chain analysis, moves away from Taylorism, and

[1] The European Commission for example, predicted that the number of teleworkers would exceed 10 million by the year 2000.

calls for the moral fabric of the organisation to be overhauled. Enthusiasts regard the virtual organisation as synonymous with new business opportunities, technological innovation and organisational change. As with earlier developments in the field of information technology, and with currently influential representations of 'cyberspace', proponents of the virtual organisation are concerned with the innovative potential of vastly increased information flows. Information technology is closely associated with improvements in the control and coordination of core activities; functional integration, quality levels and responsiveness. A large part of Handy's argument for the virtual organisation (Handy 1995) turns on his conception of organisations as processors of information. Thus he argues that:

> More and more of our economic activity is a churning of information, ideas and intelligence in all their infinite variety... an invitation to virtuality (1995:41).

The pervasive belief is that information can itself be equated with wealth creation and economic progress. Davidow and Malone (1992) treat the move to virtual forms of organisation as an economic necessity, and link it to calls for industrial renewal. The business-led models of virtuality are as much concerned with efficiency as they are with innovation. Several of the best-known accounts are rooted mechanistic assumptions about the nature of organisations. Thus, Davidow and Malone argue along strictly rationalist lines, that:

> The creation of the virtual corporation will result from linking relevant databases into ever more extensive and integrated networks. The information that we generate often induces and controls the actions of others (1992:64-5).

They also argue in similarly rationalist vein, that the provision of timely and accurate information allows the organisation to concentrate on results rather than task supervision:

> Bringing the crucial information instantly to the right decision maker and then transmitting the resulting decision through the network just as quickly means that the organisation must organise around outcomes rather than tasks. Success means working to produce results (1992:172).

Market rationality and 'friction free capitalism' pervades the writings of leading commentators such as Nicholas Negroponte and Bill Gates. As Jackson (1996) points out, Gates (1995) has argued that the superhighway metaphor is an inappropriate one and that:

> A different metaphor that I think comes closer to describing a lot of the activities that will take place is that of the ultimate market. Markets from trading floors to malls are fundamental to human society, and I believe that this one will eventually be the world's central department store.
> (1995:6)

Cyberspace and virtual working have been associated, in a second strand of thinking, with fragmentation and social atomisation. High-trust relationships between contracting parties are seen as antidote to this. For Charles Handy, the new virtual forms offer the possibility of establishing new social employer-employee relations based on trust and cooperation. But Handy is in no doubt that many Western firms remain firmly wedded to the idea that control remains the *sine qua non* for efficiency. He calls for the 'instrumental' contract of employment to be replaced by a 'membership' contract for smaller core. This emphasis on trust for a core of valued employees is strongly reminiscent of Piore and Sabel (1984) and it recalls a large volume of comparative work on the more inclusive models of employment developed in Sweden, Japan and Germany (Clegg 1990; Fukuyama 1995).

Virtual organisations, post modernity and the rejection of Taylorism

The emergence of the new virtual forms is also closely associated with the assumption that the late twentieth-century organisations are moving decisively away from Taylorism, scientific management and bureaucracy. Virtuality is associated with new approaches which require responsibility, autonomy and enterprise. The new subject at work is represented as:

> Enterprising, self-regulating, market oriented, productive, autonomous and responsible (Brigham and Corbett 1996:46).

Kanter (1989) claims that 'commitment to organisation' still matters but that managers build commitment by offering 'project opportunities':

> The new loyalty is not to the boss or the company, but to projects that actualise a mission, and offer challenge growth and credit for results
> (Kanter 1991, quoted in Brigham and Corbett 1996:49).

The concern with fluidity, responsiveness and less restrictive forms is often equated with the emergence of the postmodern organisation. Brigham and Corbett draw on Clegg's theorisation of the postmodern organisation (Clegg 1990) to argue that the virtual organisation is the archetypal postmodern form:

> These organisational forms become a virtual necessity in order to come to terms with the new external environment organisations are facing, flexibility and responsiveness are key factors for economic success and only the virtual organisation has the speed and flexibility to cope with this new external environment (Brigham and Corbett 1996:49).

Proponents of the virtual organisation have not thus far produced a theoretical synthesis that integrates complex changes in technology, markets, institutions and organisations into an overall schema. The virtual organisation concept can, however, be related to a number of earlier attempts to develop a comprehensive account of techno-organisational change. These attempts would include flexible specialisation/post-Fordism, moves towards 'disaggregated' organisational forms and new production concepts such as lean manufacturing and business process re-engineering. Within these models, markets, technological and organisation factors are typically bound together in what Jones has termed a 'tight nexus' (Jones 1990).

Figure 1 identifies three key aspects including: the assumption of a paradigm shift; the central role accorded to technology; and 'emancipatory' calls for the ethical/moral fabric of the organisation to be overhauled. The substantive content of each model varies - the key point to note is the way in which a very broad spectrum of factors is subsumed within the paradigm shift itself. The assumption of an overarching paradigm shift promotes an 'apocalyptic' (or millenarian) view of the historical process (Collingwood 1961) in which new social structures emerge from a sharp disjuncture and old forms are discarded in favour of the new (Kumar 1995); Willcocks and Grint 1997). Each of the models cited in figure 1 operate at a high level of substantive and theoretical generality. One consequence of this is that they incorporate exceedingly broad definitions of technology that cannot easily be squared with more critical work on the processes through which 'technology' has become symbolically and politically

bound up with the idea of social emancipation and organizational renewal (see, for example, Smith and Marx 1995; Jackson 1997; Willcocks and Grint 1997; Williams 1997).

Figure 1: 'Paradigm shift' accounts of technological change

PARADIGM SHIFT	ROLE OF TECHNOLOGY	'MORAL FABRIC'
'Second industrial divide' (Sabel and Piore 1984)	Programmable machines allow flexible specialisations	Craft ethos Multi-skilling High-trust relationships
New techno-economic paradigm (Freeman et al 1993)	ICTs signal end of Fordism and 'hard growth'	'Creative destruction' of old practices
Lean manufacturing (Womack et al. 1990)	Technology signals end of mass production	Consensus at work
BPR and the 'disaggregated organisation' (Quinn 1992)	IT allows control of processes	Control of labour and value chains creates responsive organisational forms
Virtual organisation (Handy 1995)	ICTs allow organisations to be dispersed in time and space	Fragmentation offset by high-trust relationships

The assumption of a paradigm shift, juxtaposed with a more or less abstract conception of 'technology' results in an 'oppositional' view of production systems - the technical organisational changes under consideration are seen as a 'one-and-for- all' departure in which new and old organisational forms are seen as mutually exclusive. Several influential critics have argued that the microelectronic revolution does not, in fact, signal a paradigm shift in the underlying structures of industrial capitalism. Kumar draws on the work of Beniger (1986) to argue that the impact of microelectronics on systems of production and distribution needs to be understood as part of a longer-run 'control revolution' which has been unfolding since mass production began to gather pace in the early twentieth century (Kumar 1995; Beniger 1986). Kumar also notes that the decentralised structures and distributed information systems associated with ICTs are entirely compatible with enhanced managerial control, and with the retention of Taylorism (Kumar 1995: 150-201). The 'control revolution' thesis is broadly consistent with a range of studies that challenge the idea of an emergent new organisational paradigm. Hyman (1992) argues that the flexible specialisation misunderstands the nature and extent of the changes underway. Studies carried out by Coriat (1991), Nolan and O'Donnell (1991), Tomaney (1994) and Smith (1991) all demonstrate the ways in which flexible specialisation needs to be seen as a compliment to (and in some cases an extension of) mass-production. For these writers, the new paradigm is embedded in the old.[2]

[2] The volume by McLoughlin and Harris (1997) contains a number of studies which explore the nature of managerial choice and relates Child's concept of strategic choice to a number of issues in technology analysis (see for example Hill, et al. 1997). These authors also argue that proponents of the new paradigm misunderstand the nature of the 'productivity innovation dilemma' facing managers. Much of the earlier work on the process of technological change has highlighted the ways in which the controls exercised by managers are bound up with the question of strategic choice (Child 1972; 1997) - but it has been demonstrated that the question of strategic

In the United States, 'new wave' management theory has tended to side-line the independent influence attributed to technology, whilst maintaining a focus on the disaggregation which has accompanied the restructuring of Western firms in the 1980s and 1990s. Porter's (1980) work on value chains and outsourcing has been a highly influential starting point for many proponents of new wave theory. Recent work by Kanter emphasises functional integration, delayering and cost reduction (Kanter 1991). Quinn's 'Intelligent Enterprise' thesis (Quinn 1992) borrows heavily from both Kanter and Porter. Quinn cites the Nike and Apple companies as paradigm examples of the new 'disaggregated' organisations. These organisations can be seen as 'virtual' in the sense that they are geographically dispersed, heavily reliant on extensive subcontracting networks, and concentrate on certain knowledge-intensive aspects of production.[3]

The 'new wave' of Harvard management thinkers such as Kanter and Quinn advocated organisation transformation, whilst retaining a rationalist and rationalising view of the firm. The widespread tendency for companies to downsize and to outsource what were previously regarded as essential services and functions to subcontractors has been accompanied by profound shifts in the employment relationship. The wide-ranging investigation of employment relationships carried out by Capelli (1995) provides evidence for intensified control, shifts in the basis of psychological contract, and the subordination of normative controls the new imperatives of competition and individual performance. This suggests a much more 'Taylorised' view of work in the late capitalist organizations than is suggested by the models cited in figure 1. Constance Perin's work on remote working and the moral fabric of the organisation is particularly interesting in this connection. Perin develops an empirically well-grounded 'symbolic schema' for analysing questions of remote working and the moral fabric of the organisation (Perin 1991, 1996). The general line of argument is that the organisational possibilities offered by information technology applied to remote working may be blocked by a range of symbolic and political 'control' factors operating within the organisation. Perin's work is focused on salaried professionals and technical employees who are said to enjoy more opportunities for 'self-management' than other white-collar employees (Perin 1991). The central finding is that salaried professionals and their employers were reluctant to adopt more flexible temporal and spatial patterns of work. Thus:

> Employers believe that being absent would be disadvantageous to their careers and employers believed that they could not supervise people out of their presence (1991:259).

Perin argues that the nineteenth-century 'panopticon' principle of industrial production - based on the surveillance allowed by co-location, co-presence and co-visibility - is 'alive and well' and deeply embedded in the moral fabric of contemporary professional organisations. In this symbolic scheme, authority is 'sustained by co-presence, whilst it is undermined by distance' (1991:259). In the context of recession, career prospects may be uncertain and Perin observes that professionals (who locate much of their identity in office 'influence') may have good reason to be less than enthusiastic about the 'invisibility' entailed by virtual working.

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choice has received little or no serious theoretical treatment within models based on the assumption of a paradigm shift (McLoughlin and Harris 1997).

[3] Quinn develops a comprehensive range of guidelines and tools for managing the 'productivity innovation dilemma'. Like the latter day proponents of virtuality he also focuses on the problem of maintaining alliances between contracting parties.

For employees working at home two or three days per week, the ‘semiotics of time and space’ and the panopticon principle of visibility acted to override:

> The computer logics of asynchronicity and virtual presence, the competence logics of uninterrupted thinking time, and the household logics of self-scheduling to meet non-work goals (1996:260).

Organisations employing professional and technical specialists are increasingly using highly directive project management models for defining output requirements, budgeting and scheduling. Perin regards these models as ‘tools for approximating the Taylorisation of non-manufacturing work’.

Recapitulation

The debate on the virtual organisation has highlighted a number of technological and organisation developments in the organisations of production. The paper has developed an alternative reading of these developments based on a number of arguments which can be summarised as follows:

1. The underlying structure of the virtual organisation concept bears a close resemblance to earlier formulations that have been based on a 'tight nexus' of technological, organisational and environmental factors and a reconfiguration of production around innovation rather than efficiency. These formulations assume a paradigm shift in technology and organisation and a historically significant break with Taylorism and mass production.
2. The argument for a paradigm shift cannot easily be squared with the accounts of contemporary restructuring cited thus far. These suggest that new technologies and organisation forms are firmly embedded in what are demonstrably modernistic control rationalities operating within increasingly dispersed and disaggregated organizations.
3. Endorsement of the virtual organisation concept is closely related to the highly prescriptive mantras of 'disaggregation' and dispersal that came to the fore in Harvard business academics such as Kanter and Porter during the 1990s. Much of this work is embedded in a highly rationalistic discourse of enhanced managerial control - and this points to a more Fordist and Taylorist organization of production than is acknowledged by those whose work assumes the existence of a paradigm shift towards high-trust 'networked' organisations [4].
4. The role of 'technology' may be overstated in discussions of virtuality and disaggregation. Several studies indicate that the core characteristic of the disaggregated organisation is not the use of technology, but its tendency to outsource and manage suppliers via a more intensive management of value chains (Kanter 1989, 1991; Quinn 1992; Hill et al. 1997). This view squares with the late capitalist doctrine of doing 'more with less' and careful management of the 'productivity innovation dilemma' (Clark et al; 1985; Hill et al; 1997).
5. Perin's work on 'the semiotics of time and space' undermines the view that 'asynchronous' remote working can be regarded as synonymous with emancipation at work.

[4] One problem is the general tendency for commentators to subsume entirely separate levels of analysis in their accounts of the 'virtual corporation'. Restructuring programmes have been driven by mergers and capacity reduction which have altered the shape of whole industries. 'Devolved' forms of managerial control exercised at the level of production may co-exist with increased firm size and/or increased levels of industrial concentration (Ackroyd 2011).

Part 2: Locating the virtual organisation in a broader theoretical context

It would be easy, given the above analysis, to propose that proponents of the paradigm shift have misunderstood the essentially neo-Fordist and neo-Taylorist character of the microelectronic revolution. But this underestimates both the complexity and the significance of the developments associated with teleworking and virtuality. It is clearly inadequate, even at the level of description, to argue that 'nothing much has changed'.
One way to progress research in this area would be to call for more work on the organisational processes and interests associated with virtual working. Much of the available empirical work supports the view that there can be no 'one best way' to promote organisational innovation - here we are back on the familiar territory of strategic choice (Child 1972; 1997). But there may be good theoretical reasons for a more radical reframing of the debate on the ways in which new organisational forms co-exist with old ones. A common criticism of 'paradigm shift' models of change is that they offer prescriptions that downplay questions of institutional specificity and the influence of particular national traditions. Much of the best comparative work is concerned with the ways in which radically different ethical values and norms of association serve to underpin a diversity of organisational forms in different societies. As noted above, the imputed paradigm shift in the techno-organisational basis of production is posited on a complete break with the bureaucratic form. This is in keeping with the general tendency towards disaggregation and the 'postmodern turn' observed by leading theorists of post modernity and organisation (Lash and Urry 1987; Harvey 1989; Clegg 1990; Hassard and Parker 1993; Thompson 1993).

Sociological commentaries by Coleman (1988), Fukuyama (1995), Granovetter (1985) and Clegg (1990) are relevant here. These authors converge on the view that different cultural traditions have created a manifold diversity of organisational structures, normative codes, control mechanisms and rationalities that may differ radically from the precepts of Weber and Chandler. Markets, bureaucratic hierarchies and networks all feature as viable alternatives that may be interwoven in different ways. Here the socio-historical breadth of canvas is much broader than would be implied by the portmanteau concept of 'trust' in the previous section. Second, and even more significantly for the debate on the new paradigm, these commentaries are concerned with the analysis of extant (rather than newly emergent) organisation forms that have deep historical and cultural roots.

Clegg's work on divergent rationalities and the 'cultural turn' in organisational theory

The intellectual starting point for Clegg's (1990) analysis is that the diversity of organisational forms (and economic life generally) is explained by its cultural 'embeddedness': economics is seen as a necessary, rather than sufficient condition for explaining particular organisational forms. Organisational theory based on social and institutional embeddedness implies not just trust, but a much greater diversity of forms than would have been anticipated by Weber, Chandler or Williamson. The examples deployed include the Korean *Chaebol*, Chinese and Italian banking networks, and Japanese *Zaibatzu.* Clegg's work on the postmodern organisation, derives not from the belief that bureaucracy has collapsed or that we are seeing the 'end of organisation' (see Clegg et al 2011 for a recent account) but from the idea that 'the one best way' advocated by Western thinkers has to be abandoned in the light of the plurality described above (Clegg 1990: 158-63)

Paradigm-shift models of industrial renewal are based on the belief that both markets and hierarchies are being superseded by new network forms of organisation based on high-trust relationships (as with the much-cited example of Benetton and the subcontracting networks in the Third Italy). But these models do little to explain the ways in which markets, hierarchies and networks may co-exist as complimentary modes of coordination or control within same organizational setting (Hill et al 2000). A study of MITI (the Japanese Ministry of International Trade and Industry) carried out by Fransman (1990) serves to illustrate this complementarity. Fransman demonstrates that MITI acted as a repository of knowledge but that it differed radically from its Western counterparts. The 'networked' character of its structure and operations derived from forms of collaboration which avoided the duplication of effort associated with market competition. State intervention in the innovation process was also concerned with 'close-to-market' development of new products and processes which differed markedly from Western models of industrial innovation. MITI's organisational structure contained elements of a classic bureaucracy, but the ministry also made use of 'market' and 'network' mechanisms to facilitate the transfer of technological knowledge. This 'multidirectional' view of organizational governance sheds some interesting light on the restructuring of public institutions such as the BBC (Harris and Wegg-Prosser 2008) and the NHS (Buchanan and Fitzgerald 2011), both of which continue to depend on bureaucratic structures, even as they attempt to adopt 'market' and 'network' modes of coordination and control. Currently influential predictions about the end of bureaucracy tell us relatively about of how this diversity is enacting in particular settings (see Reed 2011 for an authoritative review).

Part 3: Recent critiques of epochalism and 'the post bureaucratic organization'

The debate on the virtual organisation has overlapped with post-structuralist and post modern accounts of the organization (Brigham and Corbett 1996; McGrath and Houlihan, 1997). Hassard (1993) begins his analysis of post modernization by distinguishing between epochalism and epistemologically base accounts of organizational change. Post modernization can, on this view act either as a signifier for a historical periodisation or as a theoretical lens through which we can view organisations. Thus, in the first use, post modernization is seen as an epoch, and the goal is to identify features of the external world that support the hypothesis that society is moving towards a new postmodern era (Hassard 1993: 2). Information technology is closely associated with the idea that 'the social and economic structures reproduced since the industrial revolution are now fragmenting into diverse networks held together by information technology.(Hassard 1993: 3). Recent years have seen numbers of scholars taking issue with epochalist accounts of technology and organizational change (Harris and Hopfl 2006; Clegg et al 2011). We can identify two specific types of epochalism that are relevant here. The first relates to the idea of the virtual organization as a new model of production. A second, more generalised manifestation of epochalism is the tendency to see 'technology' as synonymous with radically discontinuous changes in society, institutions and organizations. Recent work on the post bureaucratic reform of the UK public sector sheds some interesting light on the first type of virtualism. Here, previously fixed distinctions between the private and public sectors are becoming increasingly fluid has become a ubiquitous theme in discussions of digitisation and the administration of the public sphere (see Dunleavy et al (2006) and Harris 2008) for discussions. The idea that we are seeing the emergence of new and more ramified forms of organizational control has attracted considerable attention from academics working in a range of disciplines including organizational studies, public administration and information systems research. There is a large volume of comment on delayering, decomposition, 'negotiated self-governance' and new forms of 'joined up' government (Pierre and Peters, 2005; Kooiman, 1993 Osbourne, 2000; Pollitt, 2003, Klijn, 2005). Some commentators have argued that public sector networks offer 'collaborative advantages' over traditionally bureaucratised forms of state-centred provision. The benefits ascribed to these forms include improved problem-solving capability, greater flexibility and more efficient service delivery (Kikert et al. 1997; Rhodes, 1997; Marcussen and Torfing, 2007). A contrasting view is that public sector networks are inherently resistant to steering, difficult to combine with other governing structures, and prone to conflicts of interest (Rhodes 1997). Growing numbers of scholars have questioned the extent to which networks and markets have supplanted traditional hierarchical controls (Farrell and Morris 2003; Bloomfield and Hayes 2009; Davies 2000). The new information and communications technologies enable new ways of organizing the delivery of public sector services (Bellamy and Taylor, 1998) – but much of this service redefinition is embedded in a distinctly utilitarian trajectory of rationalisation and business process reengineering (Ferlie and McNulty 2002) whose origins can be found in 'the new public management', (Ferlie et al 1996; Hood, 1998) and the need 'to do more with less' Ferlie and Geraghty 2007).

The more radically devolved notion of 'governance without government' turns on the view that the bureaucratic structures of the state have been displaced by a shift towards more pluralised, segmented, and diversified organizational forms (Rhodes, 1994, 1997, 2000). Whilst it would appear that the 'governance narrative' signals some distinctively new modes of coordinating service delivery in public sector settings, a growing body of evidence suggests that new post bureaucratic modes of governance have generated hybrid organizational forms that are rooted in the simultaneous devolution and centralisation of power. Whereas the pre-1979 public sector was built upon vertically integrated forms of organization in which the majority of service delivery functions were performed in-house, 'post bureaucratic' reforms outsource core and support functions whilst distancing government from the process of service delivery (Kirkpatrick and Martinez Lucio 1996; Hoggett, 1996). Hoggett (1996) identifies three distinct strategies of post bureaucratic control in the UK public sector:

- The introduction of contracts and 'managed competition' as a means of coordinating the activities of decentralised units

- The attempt to decentralise the core activities of line bureaucracies whilst centralising strategic control

- The introduction of extended development of performance management techniques

Conventional bureaucratic modes of organization focus on the exercise of control *within* the organization. The 'post bureaucratic' context of public sector reform has seen the emergence of more diversified *fields of control* that are conditioned by central government and by the organizations that operate within the field. These new fields may be more or less tightly structured (Di Maggio and Powell, 1983:149) - but their diversified nature is such that they have considerable potential for political uncertainty (Hoggett, 1996; Clegg et al, 2002) – and this means that outcomes may not be strictly as governments and planners have intended (Hoggett 1996: 17). Some studies show that the 'post bureaucratic' control regimes currently being imposed on NHS professionals (e.g. those associated with 'clinical governance' or 'patient choice' depend, paradoxically, on precisely those localised, custodial and bureau-professionalised judgements that have been undermined by the broader 'post bureaucratic turn' (Addicot et al 2007; Morrell 2006; Flynn and Williams 1997; Flynn 2002; Macdonald 2006; MacDonald et al 2008; see also Dent 2006). Scholars working in the Foucauldian tradition of organizational analysis have argued that 'governance without government' creates new forms of bureaucratic domination (Clegg et al 2002; Light 2001; Morrell 2006). Clegg et al (2002) argue that new and forms of 'alliance contracting' may create new forms of 'control at a distance' whereby 'more authoritative forms of surveillance' are fostered by the very act of building collaborative commitment and transparency into the 'moral fibre' of the project. The governmental tools used to do this include 'a strong project culture, key performance indicators and the ability to bind stakeholders together' (Clegg et al 2002:333). Some commentators have claimed that the imputed 'end' of bureaucracy can be equated with a new era in which power has become dispersed into a myriad of micro-circuits that are resistant to centralised modes of command and control (Mulgan 1988; Kickert et al 1997; Tsoukas 2005; Munro 2007) – but what has emerged in the post bureaucratic reform of the UK public sector is not the 'end' of bureaucracy, but a complex and highly differentiated array of neo-bureaucratic forms that have had the effect of undermining some distinctions previously deemed incontestable (e.g. market versus hierarchy; centralisation versus decentralisation; public versus private sectors) (Josserand et al 2006; Ezzamel and Reed 2008; Harris and

Hopfl 2006). Farrell and Morris (2003) argue that what has changed is not bureaucracy *per se* but the *locus* of bureaucratic control (Farrell and Morris 2003; Skelcher 2007).

Concluding remarks

The paper has examined the debate on the virtual organisation, highlighting the ways in which the debate on disaggregated or 'virtual' organizations has cohered around an assumed paradigm shift in technology and an imputed historical break with the bureaucratic controls that characterised the era of Taylorism and mass production. The paper has presented a series of counterfactual examples that emphasise the highly ambiguous, contested, and contradictory nature of the changes under consideration. The empirical work cited also suggests that proponents of the virtual organization have understated the persistence of bureaucratic control rationalities in both private and public sector settings. Whilst growing numbers of scholars have taken issue with 'epochalist' accounts of technology and organizational change, what is missing from the debate on virtuality is a recognition that 'paradigm shift' thinking operates within some highly particular expressions of futurity. The discourse of virtuality also operates within an explicitly anti-bureaucratic logic. This logic reproduces what has been called the 'tyranny of the epochal' (Du Gay 2003), thus underpinning the tendency for 'technology' to seen as a quasi-independent 'driver' of change in formal organizations.

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