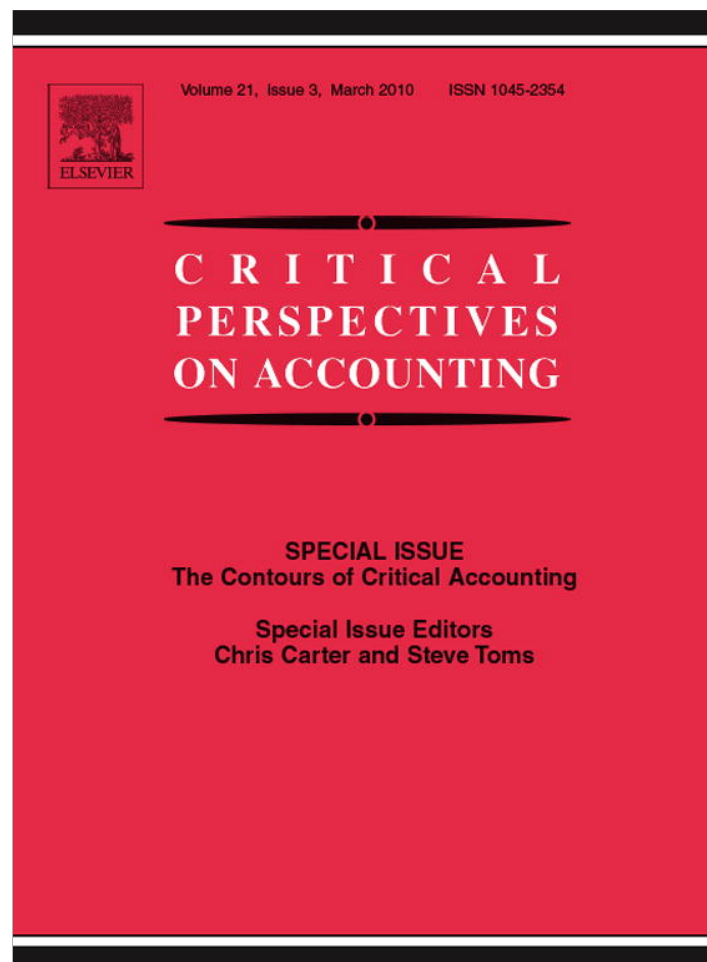


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Knowledge, risk and Beck: Misconceptions of expertise and risk

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ABSTRACT

Ulrich Beck's work is beginning to alter how risk is understood. This paper maps out the core of Beck's argument and provides a critique of his analysis. In particular it argues that this emerging concept of risk is flawed because it is not rooted in an ontological view of knowledge and, hence, it misunderstands the relationship between experts, expert knowledge and lay knowledge. Because of his downgrading of ontology, Beck under-theorizes the politics of expertise and the sociality of knowledge hence we should be cautious in our use of his analysis of risk and organization in late modernity.

It has been said civilization is a race between education and catastrophe. With Katrina, we have had the catastrophe, and we are racing inexorably toward the next. Americans want to know; what have we learned?

(US Select Bipartisan Committee, 2006; ix)

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As I started to write this paper the effects of Hurricane Katrina on the Gulf Coast of the USA were being considered – estimates ranged from a cost of \$200 billion and up to 400,000 job losses, not to mention the dead. Central to the debates surrounding the hurricane were the failings of state and federal organizations to respond to both the immediate crisis and to the seemingly increased risks associated with modern life. This anxious reaction reflects the growing importance of risk as an organisational and sociological concept over the past twenty years. In Europe, this emphasis on risk is demonstrated by two of its leading management journals – *Journal of Management Studies* and *Organization Studies* – devoting special issues to the topic of risk and modernity in 2006 and 2008, respectively. Both issues reflect the deepening European concern that our concept of risk is altering and that conventional statistical definitions, based on probability, are becoming evermore problematic – a view perhaps being echoed in the USA (see US Select Bipartisan Committee, 2006). Building on the work of the European social theorist Ulrich Beck, this emerging redefined concept of risk is totalising and suggests that we need to be ever prepared, ever vigilant and ever insecure. Neither organizations nor societies can slip into the old production forms of the past. Key to this shifting and increasingly important concept is the proposition that the world has altered and new dangers are replacing the old stalwarts of class and economic privation as the West moves to a post-scarcity society.

Many of the themes raised by Beck have filtered into the popular, political, academic and management discourses of major European economies. For example, there are the two special issues already mentioned; there have been numerous analyses of his work in important sociological journals such as *Theory, Culture and Society*, and *Sociology*; since the 1992 English translation of his book *Risk Society*, it has been regularly reprinted. In 1998 it was reprinted five times alone. On top

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of this, it has influenced a range of edited collections, papers and monographs dealing with the topic (see, for example, Adams et al., 2000; Lash et al., 1996; Dingwall, 1999; Wilkinson, 2001). In the UK, the Department of Health began to centralise risk and individualisation in its delivery of healthcare (Milburn, 2002); public policy programmes were reformed and the welfare organizations expected to deliver them were reshaped by themes of risk, trust and individualisation (Jordan, 1998; Culpitt, 1999; Hanlon et al., 2006; Kurunmaki, 2008; Taylor-Gooby et al., 1999); *The Economist* (January 24th–30th, 2004) ran an extended section on risk which explicitly talked about human manufactured risks, environmental issues, industrialism's contradictory nature; and it has been argued that risk is a new organizing concept (Miller et al., 2008; Power, 2004, 2007). Whilst it would be an overstatement to suggest all of this attention stemmed directly from Beck's work, it is fair to say that it shaped much of the debate around risk, trust and individualisation. In Europe, Beck's thesis is helping restructure the intellectual terrain around the topic of risk, organization and management. Interestingly, he has not yet had the same impact in the USA but the opening quote is redolent of many of the themes Beck raises.

What follows outlines and examines the Beck thesis. It proposes that Beck's understanding of experts and knowledge is incorrect. The corollary is that his thesis is suspect in its interpretation of our relationship to expertise, how we interact with experts and the organizations they work for, and, finally, how we relate these to risk. Hence the paper urges management scholars to engage Beck's work with a degree of caution and argues for an ontologically rooted understanding of knowledge. Before fleshing out my criticisms of Beck, I will summarise the role of expertise, experts and risk within his work (for wider insightful analyses of Beck's work see Elliott, 2002; Scott, 2000; Dingwall, 1999; Lash, 1993).

1. Beck's vision of risk and expertise

Beck's thesis is developed across three themes, each of which contributes to his arguments concerning social restructuring. These are:

1.1. Instrumental rationality and the generation of risk

The key features of late modernity for Beck are the proliferation of humanity-made risks and the failure of social institutions and organizations to manage them. Indeed, intervention is part of the problem. In short, the instrumental rationality that produced the industrial age and a post-scarcity society is now the key problem with which we have to contend (Beck, 1992, p. 20). For Beck (1999, p. 131), this 'reflexive modernity' is also characterised by the centrality of a new unawareness that takes two forms. Firstly, *knowing* we are unaware which prioritises decision-making, e.g. to embrace or not to embrace the potential threats or benefits of the biotechnology industries; and, secondly, a more dangerous form of unawareness, wherein we are ignorant of our lack of knowledge and hence continue to act unknowingly in a destructive manner. Within this new world our old organizational forms of insurance – public welfare and private insurance – are unable to cope (Beck, 1996a, p. 41). This unawareness gives risk a totalizing dimension as we are ever insecure, unaware and at risk. Accompanying this is a collapse of responsibility because finding the causal source to apportion blame – either to organizations or practices – becomes increasingly difficult. After all, how do you insure against or apportion blame for global warming or declining sperm counts?¹ In this world, new forms of regulation are required by organizations and regulators to counter all-pervasive risk. As such, risk is increasingly at the centre of service and product delivery and is becoming an organising principle in its own right (Power, 2004, p. 11).

1.2. Growing individualisation

A second strand in Beck's thesis is the growth of individualisation (Elliott, 2002). For Beck (1992) the decline of class, the flexibility of work, the changing nature of gender relations, the demise of tradition, etc., all lead to individualisation. People are increasingly thrust onto both the labour market and consumption for their identity formation and the private and the public become increasingly inter-meshed as, say, publicly funded school and University systems enable one in the privatised job market and are hence central to one's identity. All of this is important because traditional ties are replaced by secondary agencies and organizations which stamp the individual biography and these agencies are, at least partly, shaped by what Beck calls the 'sub-politics' of expertise (Beck, 1992, p. 131). This brings with it new moral dilemmas and responsibilities, e.g. how should we use genetic engineering and, indeed, new opportunities and freedoms for both individuals and organizations (see Power, 2004). Individualisation is thus a complex process wherein individual reflexivity and reflexive organizations shape our identities. All of this occurs in an environment which Beck claims is more and more ahistorical as both individual perceptions and social ties become privatised. The individual becomes a constantly learning and de-traditionalised organism engaged in reflexively planning their biography through organizations in work, education, healthcare, religion, etc.

¹ Despite this difficulty, blame appears to be a growing part of political and expert life especially in institutions such as schools, hospitals, and the civil service (O'Neill, 2002). Indeed, Hood (2002) suggests we are living in a world where politicians increasingly seek to offload blame onto others and garner credit for themselves thereby intertwining risk and blame.

1.3. Reflexivity and late modernity

Alongside the growing risks (and opportunities) generated by instrumental rationality and individualisation, there is also the emergence of an increased reflexivity within late modernity itself. This reflexivity takes two forms. One, systemic self-monitoring, i.e. where social institutions and organizations vainly attempt to monitor reflexively the risks they are creating – examples of this reflexivity include: the recent agreements between the European chemicals industry and Greenpeace concerning the damaging environmental impact of fire resistant chemicals in furniture being weighed up against the acknowledgement that this environmental cost may save lives; and the US state's attempts to understand and learn from the Hurricane Katrina catastrophe (US Bipartisan Committee, 2006, p. 15). And two, individual self-monitoring, wherein individuals reflexively attempt to negotiate their way through a world increasingly less structured by tradition and the institutions of 'simple modernisation' such as class, family and work (Lash, 1993; Elliott, 2002). This implies 'then "reflexive modernisation" means self-confrontation with the consequences of risk society which cannot adequately be addressed and overcome in the system of industrial society (that is measured by industrial society's own institutionalised standards)' (Beck, 1996b, p. 28). Indeed, this form of societal and citizen reflexivity may actually loop back into risk because it creates new forms of unawareness. Ultimately, this reflexivity leads to the emergence of the politics of the sub-political as 'the hitherto prevailing "harmonisation formula" – technical progress equals social progress' (Beck, 1992, p. 190) gives way to a guerrilla war wherein the meanings of both technical and social progress are subject to dispute in a gamut of arenas – a crucial factor in this sub-politics is our relationship to knowledge, experts and expertise (Alexander, 1996; Beck, 1996b; Rose, 2000) and hence the organizations and institutions that harbour them.

Unsurprisingly, this work has come in for criticism on a number of levels. Scott (2000) has argued the assertion that risk is egalitarian in its favours is unfounded. Whereas Beck suggests risk is indiscriminate, Scott argues that this is predicated on the type of risk Beck describes. Beck posits ultimate catastrophes like environmental disaster as the face of insecurity, whereas Scott (2000, pp. 34–37) argues risk is more low key and is premised on the issue of scarcity (which he suggests is not so very different to the economic and social insecurities of the past). Ultimately, these low-key risks are based on the old material issues of class and inequality rather than Beck's unawareness and risk. Similarly, Rose (2000), Dingwall (1999) and Elliott (2002) have queried Beck's emphasis on catastrophe. One should also add that even in a world of catastrophe, inequality is still an important factor in people's ability to cope, e.g. the fact that Hurricane Katrina struck at the end of the month appears to have made it difficult for people on fixed incomes to purchase the gasoline necessary to leave the affected areas (US Bipartisan Committee, 2006, pp. 111–113).

Secondly, Beck has been taken to task for his views of individualisation. Lash (1993, 2000) suggests he is too individualistic and that this leads him to stress the rational and the instrumental over the non-rational and the aesthetic (a criticism which Beck, 1999 has himself acknowledged). Lash argues risk is often based on sociality, inter-subjectivity and group behaviour or thought rather than the isolated actor – for example, men view risk in financial and work terms whereas women see it around issues of health and family (Lupton and Tulloch, 2002). Importantly, this inter-subjectivity gives a social interpretation to the organisational and behavioural forms that act as the loci of risk. Furthermore, the old categories of class, gender, or ethnicity still seem to be very much alive. For example, Crow et al. (2002) query Beck's individualisation thesis and find that neighbour relations in Britain are heavily shaped by group associations and factors. Similarly, ethnicity is still a feature of our global society, as Hunt (2002) demonstrated in his work on religion and ethnicity amongst London's West African community, and in the US it has been suggested that African Americans may relate to expert advice differently to the general population (US Bipartisan Committee, 2006, pp. 19–20). Thus Beck's view that individualisation is a dominant theme in late modern life has been questioned and he has been accused of seeing newness and discontinuity where it does not necessarily exist.

Although these critiques are important, this paper wishes to highlight the specific problems of his interpretation of expertise and knowledge. These issues have the most obvious connections to management and organizational processes because they mould how people engage with expert organizations and organizational life. By demonstrating the weaknesses in Beck's analysis of knowledge and expertise we are led to question his concept of risk and late modernity especially with reference to critical accounting and management. Before doing so, however, the paper will map out Beck's views in more detail.

2. Beck's understanding of knowledge and expertise²

Beck portrays a world of potential disaster. Science and modernity have created a society of hazard and risk. This risk is everywhere, is potential and yet often denied.

² What follows will highlight the complex nature of the lay-expert relationship. It will demonstrate how issues of trust, forms of alternative or folk knowledge, class, ethnicity, education, etc. shape the interpretations of *all* concerned – both lay people *and* experts. Thus where the expert and the lay begin and end is questionable. This separation has always been difficult but it is perhaps even more difficult today as, for example, a financial expert is a lay person in the natural sciences and yet they are influenced by the work of social science experts like Beck in their understanding of an issue such as GM foods. Thus the concepts of lay and expert populations are fuzzy because they are mutually penetrated in a variety of complex ways. Indeed, following the Frankfurt School one could argue there are not clearly separate expert and lay knowledges but rather inter-penetrated knowledge which is accepted or rejected as we 'learn' thereby making the 'expert' an evolving concept (Apel, 1977; Held, 1980). However, for the sake of clarity, I will separate lay and expert but this is an uneasy separation thus I will use the terms as Weberian ideal types (Gerth and Mills, 1948, pp. 59–61).

2.1. Perceiving risk

Within such a world experts mediate between the individual and risk because to be deemed at risk an expert has to intervene. People are becoming increasingly dependent on others in 'matters of their own affliction' (Beck, 1992, p. 53). For example, doctors tell us we are ill; experts in the public and the private sectors tell us whether what we eat is safe or not; lawyers tell us we are liable or due compensation; scientists assess our environmental safety; accountants tell us about the financial health of companies, etc. Thus experts are increasingly the gatekeepers of risk. Furthermore, for Beck, this role is becoming increasingly important as risk positions reverse class positions in many respects. The educated and the middle class better inform themselves about risk thereby increasing their insecurity, whereas the working class or the poor although equally and often at times more at risk, remain somewhat blissful in their ignorance because 'to put it bluntly, in class positions, being determines consciousness, whilst in risk positions, conversely, *consciousness (knowledge) determines being*.' (Beck, 1992, p. 53 emphasis in the original). It should be stated Beck (1992, pp. 53–54) goes on to highlight how we also do not know hence our lack of knowledge about DDT in tea or formaldehyde in cake leads to a loss of 'an essential part of their cognitive sovereignty'. The vacuum is filled by competing expert voices. Central to his position is the view that knowledge or its lack determines being. In this sense reflexive modernity is new because affliction is dependent on external knowledge unlike say unemployment which is dependent on personal knowledge.

It could be argued that this risk consciousness and the reversal of disadvantage associated with it are reflected in how risk is currently shaping our collective identity. For example, building on the work of Althusser rather than Beck, Moten (2002) has argued that the risks of terror are used to suggest we are all always at risk from the irrational. Hence we have often no personal knowledge of terror's affliction yet the potential is clear and independent of our personal knowledge. Indeed, it is suggested that this invigorated awareness of risk is being used to divide us into the terrorized and 'other' thereby making the 'other' – less human than 'us' (Feldman, 2004). For example, it is estimated that the US government has a list of 325,000 terrorists or terrorist suspects (*Economist*, 18–25 February 2006; p. 48) and this and other risks are forming our collective identity and if we are not conscious of or do not perceive risk then we too are somehow 'other' and potentially a threat. They are also reshaping the public sphere as citizens are asked to be vigilant and police social space. In this world, Western and middle class risks – space shuttle disasters, genetically modified (GM) foods, etc. – are seemingly equal to other risks such as poverty, immigration, sex trafficking, and famines. Indeed, they may demand more attention. But furthermore, if you are one of the 'other', e.g. obese, smoking, unemployed, a refugee, an illegal migrant you are potentially generating risk via the draining of the health and social services, passive smoking, illegality, violence, etc., and are thereby in need of regulating via expert organizational practises.

Beck argues that in this new world expert knowledge, regulatory know how, inquiries, commissions, etc., are not just about science and expertise but about who is afflicted, who is at fault, who should be compensated, who should be punished, and so on. Given that it is the middle class who perceive risk more it is likely that the State, and powerful organizations more generally, will increasingly focus on the risks that trouble them rather than others. In this environment, the exacerbated sense of threat which some groups feel leads them to demand action to protect their seemingly threatened way of life thereby forcing the state (and others) to reshape organizations, institutions and expertise in their interests – witness the recent radical restructuring of the US security apparatus through the constitution of the Office for Homeland Security. This reorganisation has been implicated as one of the reasons for the poor response of the Federal Emergency Management Agency to Hurricane Katrina's devastation and the disproportionate suffering of the poor and African American populations (BBC, 2005; US Bipartisan Committee, 2006, pp. 151–161) (on the issue of risk as a threatened way of life, see Douglas, 1992). Knowledge and expertise are indeed politicised as Beck suggests. What he does not discuss however is how the state and public and private organizations, where much of this knowledge and expertise is located, have long been politicised and developed along seemingly new regulatory lines (for varying interpretations of the importance of these organizations see Foucault, 2003a,b; Hardt and Negri, 2000; Clark, 2005; Arendt, 1958). As we shall see Beck's *partial* politicization of knowledge, expertise and their organizational loci have important consequences for his view of the reshaping of expertise and expert being.

2.2. Contested knowledge fields and rupture

A second strand of Beck's view on expertise argues that there is a schism between scientific and social rationality, between expert and lay knowledges. He suggests that because of the way science works – especially in its pursuit of causality – it conflicts with the way the lay population views the world – given its tendency to correlation. Thus experts often cannot definitively say which chemical (and at what level) causes which particular disease hence no one firm or institution is forced to take responsibility. As such the risk, but especially the responsibility, is denied or downplayed or offloaded (Beck, 1992, p. 63; Hood, 2002). In contrast, the lay population use a social rationality that recognises we are at risk because, for example, our health has deteriorated and we demand some action. However, the actions we demand are significantly shaped by experts, who are unable to say categorically what the cause is and hence do little, thereby weakening public faith in science. This leads Beck to suggest we are in a world where knowledge fields are both open and contested (Beck, 1999, p. 125). Accompanying this openness is a plethora of competing expert voices, as reflexive modernity becomes characterised by confusion and a crisis of expertise and knowledge (Beck, 1996a, p. 33). This confusion and openness do not enable us to simply do without experts because although contested, expert knowledge is still necessary to be deemed at risk (Beck, 1999).

This position implies the expert and lay realms are separate. However, surely it is at this point that lay knowledge is most obviously inter-penetrated with expertise if only because expert knowledge is characteristically legitimated via the state and civil society and the competing expert voices necessarily seek to gather support from non-experts (Abbott, 1988).

Yet again, Beck is on to something here but he does not press far enough. Arendt (1958, p. 275) locates the start of this doubting of expertise or science at the very heart of the Enlightenment. She claims the telescope forced us to doubt our senses and thereby undermined our trust in the idea of truth. (In addition, she links science very directly to the kind of hazards and risks identified by Beck – see 1958, p. 268). Equally Foucault argues the eighteenth century university is a place where experts vie to establish competing truths in a more open ended knowledge system (Foucault, 2003a, pp. 184–185).

On the surface, much of Beck's thesis is plausible and applicable to the seemingly risk laden world we inhabit. However, a number of points should be made before we accept his work. As suggested, Beck separates out the scientific from the social too readily. Beck is largely missing a theory of lay knowledge or social rationality thereby recreating some of the dichotomies of modernity (Wynne, 1996). As we shall see, his emphasis on consciousness over being (Beck, 1992, p. 53) takes him away from an ontological understanding of knowledge and an analysis of how expert and lay worlds are both inter-penetrated and materially constructed. In short, consciousness is rooted in being. There is a range of issues that need unpicking here. Firstly, Beck assumes that in simple modernity we trusted experts and expertise somewhat more than today and he assumes today we lack trust and that we engage with trust in the realm of expertise in an instrumental–calculative fashion (Lash, 1993). Thus today we calculate who we trust amongst the various voices in a rational manner. However, the picture from the past is not quite so clear cut. Secondly, public dissent and lay knowledge have shaped expert knowledge in the past. Thirdly, what 'expert' knowledge do experts actually draw on – Beck underplays the importance of social relations, practises and hermeneutics and this leads him to prioritise consciousness over being. Thus expert knowledge is somewhat unquestioned by Beck, yet it may often in reality actually be lay knowledge which is deployed.

3. The need to understand the historical sociality of expertise and knowledge

What follows will attempt to critique Beck's insightful study through these three themes.

3.1. *Trust and expertise*

As stated, in his theory of change Beck assumes we trusted experts and expertise more in the past and implicitly appears to assume that the agency was one way – from experts to the lay population. However, as the history of medicine and other areas demonstrate we were never as trusting of professionals as Beck assumes (see Larson, 1977; Abbott, 1988). For example, Jewson (1974) has argued that what constituted UK medical knowledge in the nineteenth century was often determined by wealthy patients. Rich clients shaped medical scientific knowledge and the skills and qualities that were rewarded. Loudon (1986) argues a similar point suggesting hospital doctors in the nineteenth century were monitored by wealthy patients, patrons and hospital governors who partially determined which practices were deemed professional and, hence, how expert being and expert knowledge was shaped. Thus if experts and expertise were trusted, it was because those in positions of authority substantially controlled these experts, the organizations that developed them and the knowledge that they produced – it was not as neutral nor objective as Beck suggests (Hanlon, 1998). Indeed one could argue, the power flowed from the laity to the expert and, at times, experts had to demonstrate their 'suitability' and trustworthiness.

But lest we mistakenly assume only the powerful shaped professional knowledge and organizations, Bloor (2002) demonstrates how the miners of South Wales systematically challenged medical expertise in the early and mid twentieth century. He argues that miners recognised the political nature of expertise and the fact that mining company doctors were not necessarily impartial, objective nor scientific. As such miners employed their own doctors, challenged medical expertise in parliament, used their union money and power to demand that 'new' medical diseases such as miner's lung be recognised by the medical profession, the mining companies, etc. Miners' concerns with health and safety eventually led to an overhaul of the working and organizational practices of mining. This is largely due to their trades unions forcing technical, engineering and medical change despite vociferous expert and owner opposition (Bloor, 2002, pp. 96–100). This is directly political in the way Beck suggests is new, i.e. the experts are on both sides, experts partially decide who gets compensated, who is responsible, what remedies should be put in place, etc. Yet all of this occurred during what Beck calls 'simple modernity'. Hence in the past experts were central to having risks legitimated (in line with Beck's thesis). But crucially, these miners were very much aware of the seemingly sub-politics of expertise which Beck is claiming is new today. Thus a key feature of reflexive modernity is actually rather old.

3.2. *The public shaping of expert knowledge*

As importantly, expert being and the knowledge that sprung from this encounter were reshaped. For example, the medical organizational structure was both directly challenged and radically altered. The medical services provided by the union of the South Wales miners to its members and their families became the blueprint for the UK's National Health Service (NHS). It is this organizational form where UK medical advances have often been housed in the past sixty years and where the vast majority of UK doctors train and work. These developments took place because lay consciousness, formed on the basis of lay being, challenged and rejected the earlier form of expert being and expert organization. Thus lay being and knowledge helped

to shape the whole organizational structure, creation and delivery of UK health services and the science it subsequently generated. One could further argue that this lay challenge helped alter the property basis of UK medical science by shifting it from being largely private alienated property – a commodity – to what Robert Merton calls the 'communism of science' which he argues is one of the key causes for the success of science and modernity (Merton, 1968, pp. 604–616). The two realms are thus not separate nor is the influence one way. They spill into each other and, at least in the past, lay being and knowledge could and did force expert, organizational, management and social change. Knowledge was at least partly collective and not individual nor was the expert separate from the non-expert; lay people recognised the politicisation of knowledge and hence challenged (and supported) expertise. This begs the question, in light of this politicisation, what is expertise? In this instance, during simple modernity, expertise is partially given meaning through the being and the collective hermeneutics of mining life for miners in South Wales. This is something Beck's concept of knowledge and expertise in simple modernity cannot adequately account for. At the heart of much scientific experience in the UK over the past sixty years is the collective struggle in the economy as a whole. This lack of a being based explanation hampers Beck's ability to relate the risk position of miners in simple modernity to their daily practise and experience and their ability to reshape expertise in ways that he wrongly characterises as new. But, as importantly, it also means he implies today's expertise somehow arrived immaculately free of politicisation, i.e. that until reflexive modernity it was somehow 'pure' in contrast to views promulgated by theorists as diverse as Foucault, Arendt and Marx. Thus the sub-politics of expertise pre-exists reflexive modernity and, importantly, has shaped the expertise that has infused this reflexive modernity.

3.3. *The need for an ontological and hermeneutic understanding of knowledge*

Beck discusses the modern tensions that exist in a world of open and contested knowledge fields. However, he does not adequately analyse how meaning is assigned within and between these fields by lay people. This is a weakness because knowledge becomes knowledge through our acceptance of it – by our ability to view it as knowledge and thereby legitimate it (Husserl, 1970; Kuhn, 1962; Abbott, 1988; Clegg, 2006). Beck is aware of this but he never examines the practises of how we legitimate this knowledge and hence the risk positions it imparts. Indeed, as we have seen, he suggests that in reflexive modernity being (*practice*) is determined by knowledge (*consciousness*) (Beck, 1999, p. 53). However, following Althusser (2005, pp. 219–247) one could argue that the actual work of production involved in generating knowledge is central if we are to distinguish ideology from science – as the south Wales miners example demonstrated (Bloor, 2002) how 'knowledge' is produced is itself central to the form this 'knowledge' takes (Outhwaite, 1987, pp. 5–19, on the importance of ontology to the legitimation of knowledge). Prioritising being over consciousness preserves the dynamic quality of social life in the formation and alteration of concepts (see theorists as diverse as Adorno, 2002, p. 459; Durkheim, 1973, pp. 34–37). This lack in Beck's understanding of knowledge ironically leaves the sub-politics of his expertise devoid of real struggle and power. In its stead is a rational contest of 'ideas' searching for backing amongst a set of seemingly equal publics.

In contrast to Beck, Michael's (1992) work examined knowledge practises and he showed how the lay population relate to expertise both in general and in particular. What he concentrates on is how the lay public construct expertise. The lay population have a complex relationship with 'expertise in general' which enables them to see this knowledge as different to, but not necessarily better than, their own. 'Expertise or science in particular', which involves lay people working with or having regular contact with experts, enables the lay person to see expertise as an external form of knowledge which stands alongside their own. Here a range of organizational issues from power, trust, dependency, agreed goals, equality, etc., all come into play and shape the lay person's interaction with the scientist or expert in particular. Thus the daily practises of electricians at the Sellafield nuclear power plant means they come to trust the specialists and see these experts as enabling them to do their job because their own lack of knowledge is compensated for by the specialists and, to some extent, vice versa. The relationship is sometimes conflictual or ambiguous but it is always placed in a social and organizational context.

This implies that social relations, practises and meanings within and beyond organizations are what give rise to trust, ambiguity or hostility towards expertise – something Beck argues. In this world, the person identified their self with 'science in particular' but would not or could not do so with 'science in general'. What is occurring is that the 'abstract scientist in general' is disembedded from practice, organizational and social life and hence, at best, viewed ambivalently. In contrast, the 'particular scientist' is grounded in a set of social relations and practises not in the nature of scientists or science but within a specific set of social relations and organizational interests that may support or undermine lay peoples' faith in the expert, and his or her expertise and the expert's ability to define risk positions (Michael, 1992, p. 330). Being and practice are key here to trusting or not trusting embedded expertise.

One can see aspects of these processes in the response of some people to the warnings concerning Hurricane Katrina wherein people with 'hurricane fatigue', prior experience of hurricanes, concerns over money, security, etc., placed expert advice within a set of previous warnings, trust of state officials, etc., and decided to remain where they were (US Bipartisan Committee, 2006, pp. 361–362). In short, being still shapes consciousness. These lay populations, like the miners seventy years earlier, placed expert knowledge and their risk positions within a web of social relations and practices and hermeneutic meanings rather than view it as objective. Beck would agree with this view but for different reasons. He believes consciousness determines being (1992, p. 52) which leads him to underplay the historical and the material nature of risk. This lack means he underplays the historical and material ways in which lay practices helped to create expert knowledge and lay reactions to contemporary expertise and leaves him open to something akin to the critique of Feuerbach (Marx and Engels, 1970); namely he can be accused of idealism. From here it is a short step to assuming the

middle class are more aware of and informed by risk even if others actually experience greater risk and to deny the role of these others, e.g. miners in the past or migrants today of knowing and of politics, i.e. of being able to change their worlds.

A deeper historical and material understanding would strengthen Beck's position. We could see in clearer focus how expertise and expert judgements of risk as viewed by the lay public are fundamentally shaped by the lay public's own knowledge and consciousness. This is derived ontologically via practice and entails the lay public placing experts and expertise within a broader set of social or organizational relationships – thus I can trust my doctor even if I feel the health system is under-resourced, medical scare stories fill the newspaper and abstract science is under siege. This entails the politicisation of knowledge. But, it is not new. More to the point, it also entails the inter-penetration of lay and expert ontologies and knowledge or of social and scientific rationalities rather than viewing them as separate realms; for example, people often use expert knowledge to form an understanding of their health, their environment, etc., which then informs their engagement with science and risk as the lay and expert realms dialectically interact. It is through this dialectic placing that an ontological and hermeneutical conception and understanding of risk or non-risk are reached; and, of how our relationships with experts and expert organizations are constructed, even for experts (Apel, 1977; Held, 1980, pp. 296–330). This understanding is a key feature of the open knowledge field and it has shaped expert and professional worlds since their inception (Abbott, 1988).

But the expert world is even further penetrated with the ontological and lay. Although Beck recognises the contested nature of knowledge because of his downgrading of practice he underplays the role of organizational and institutional conflict in expertise. As Larson (1977), Armstrong (1985), and Abbott (1988) have argued, experts in a variety of areas engage in 'turf disputes' to carve out social space for themselves. These disputes typically involve experts in a bid to gain the endorsement of the state, the public's trust, organizational power, etc. As such, their knowledge is partial, driven by their practice, socially constructed and often reflects the societies they come from rather than simply being objective (Apel, 1977; Lash, 1993). Expertise is actually created via expert–expert debates and practice and expert–lay debates and practice in an attempt by some groups to commandeer a place at the expert table. In Sweden, for example, many Anglo-American accountancy functions are both carried out by engineers and have different implications reflecting the Swedish social structure which has real consequences for how companies are audited, what is deemed to be appropriate knowledge for auditing, what other services auditors can or cannot sell, and, hence, what other knowledges are deemed legitimate for use by an auditor, etc. (Hanlon, 1994, 35–76). Again expert consciousness or knowledge does not determine accounting life rather practice informs and shapes consciousness, especially when it comes to what activities are legitimate. By ignoring this practice and ontology we run the risk of assuming expert knowledge is objective.

As such, expertise is shaped by wider ontological struggles which the lay public are involved in (even if this is often indirectly) and lay knowledge is always involved. This involvement is important as experts usually use their position to grab jurisdictions beyond their expertise and to do this they need public support, state legitimation, etc. (Abbott, 1988; Larson, 1977). Thus to use Wynne's (1996, p. 59) terminology this expert knowledge is based on cultural-hermeneutic assumptions which often pass themselves off as objective to gain material advantage. In short, expertise and expert knowledge are themselves riddled with ontological features and lay knowledge.

4. Discussion and conclusion

As suggested at the start of this paper, Beck's thesis is widely popular and in many ways it speaks to the concerns of our time – environmental change, globalisation, new and uncertain industrial developments such as biotechnology, genetics and engineering. His scholarship also examines the changing nature of work and family, the shifting nature and role of knowledge within organisational and social life, etc. There is much in his research that is challenging and he is asking many important contemporary questions. His work has also encouraged others to attend to these areas and hence it should be commended.

Despite his important intervention, I believe we need to criticize Beck's conception of knowledge and expertise. Doing so raises questions about the validity of his overall thesis concerning risk and late modernity. Central to my objections to his thesis are: (1) the sociality of knowledge and expertise, (2) the lack of an ontological and hermeneutic understanding of expert knowledge, and (3) the fact that expert and lay knowledges are inter-penetrated in ways that Beck acknowledges but underplays through his implicit assumption of rational objectivity. In short, these criticisms highlight the weakness of a theory of knowledge and risk which is not rooted in how daily practice shapes our ability to know. A combination of these criticisms leads me to assert that Beck underplays the historical and contemporary importance of lay practice and knowledge, its relationship with expertise and its long politicisation. Furthermore, it is only through an ontologically derived theory of knowledge that we can access the social struggles and politicisation of expert practice which Beck articulates but never captures. These weaknesses undermine his understanding of how risk positions and expertise are created. Ironically, by not rooting his thesis of knowledge in ontology and sociality he limits the political scope of his argument by endorsing much expertise as objective when it is not – it is and has always been politicised. The inter-penetration of expert and lay knowledge and ontology posited in this paper is central to his watered down sub-politics of expert knowledge because it actually politicises expertise beyond the realms Beck inhabits. We cannot use Beck to get to this further politicisation. By stressing consciousness over being we are left without an adequate theory of lay knowledge, practice and experience and, indeed, the struggles upon which the 'expert' is created, i.e. upon which we have the expert realm we have today. As Arendt

has argued it is precisely the fact that technology undermined our faith in our sense which is central to understanding modernity.

In order to understand expertise we need to return to lay experience and struggle. Furthermore, organizationally this politicisation of knowledge is important because it blurs the boundary of the organization and has a direct impact on the legitimacy, production and delivery of services such as health and science and the designation of risk positions. Lay knowledge and people will clearly help to shape new technologies such as biotechnology and the organizations that house them. Thus today decisions of risk and risk positions are influenced by the lay struggles which created our societies, organizations and knowledge in the past. This blurring of the expert and the lay worlds demonstrates how the politics of expertise runs deeper than Beck allows and has a different origin to those he suggests. Its origins are materialist and ontological.

By stressing ontology and lay knowledge we are encouraged to see agency in the lay population and hence social conflict. In contrast, a stress on consciousness encourages us to lose the dynamic nature of social life (Adorno, 2002) and hence to see the lay population of the past as 'cultural dopes' and over-socialized (see Wrong, 1961). Furthermore, this emphasis on consciousness encourages Beck and us to see agency as something that is individual (Lash, 1993, 2000) rather than collective and hence to view the past as a country where people were bound by class, gender, race, etc., rather than being given agency by these very structures. But this sociality and these collectivities were also enabling because of the shared practices, and hence knowledge, they engendered (Harney, 2005, 2006). Thus the South Wales miners could and did exhibit agency precisely because they were a collectivity in much the same way as Grieco's (1996) work on social networks and employment amongst the Scottish diaspora in Corby, Granovetter's (1985) paper on networks and the labour market, or Sennett (2003) work on our inter-dependency, demonstrate that agency can be and often is collective. Also relevant here is the research of Larson (1977) and Armstrong (1985) who argue that professional expertise is so designated as a result of collective mobility projects which enlist lay help, have real organizational consequences and are often based on a shared ontology. By refusing an ontologically driven theory of knowledge Beck denies the ways in which historically important institutions and organizations such as the large accountancy practises (Hanlon, 1994, 1996, 1999a,b), legal systems (Hanlon, 1999a,b), health systems (Bloor, 2002), public utilities (Carter and Crowther, 2000; Carter and Mueller, 2002), and scientific systems (Merton, 1968) were formed and hence legitimately enabled to regulate large areas of social life.

For Beck, this ontologically generated sociality and collective form of historic and contemporary agency is somehow absent and agency seems to be both new and individualistic. Yet, interestingly, Bloor (2002) hints that one of the problems faced by the less powerful today because of a decline in shared practice is that they cannot coalesce into strong enough collectivities to impact on expertise, the state, policy makers and organizations and, by implication, they cannot get their risks designated as such – in short, their risk positions are not legitimated. Thus it may be increasingly hard for groups such as miners to re-create organizations like the UK health service. After all, there were almost one million miners in Britain at the beginning of the last century and it was this that enabled them to exert agency over experts and put down the blueprint for an organization like the National Health Service even if they also needed expert legitimation. In the current environment, this is more difficult as collectivities – and their shared ontologies – seemingly become smaller and/or more dispersed. Beck may be right but for the wrong reasons. Perhaps now we have less agency and our capacity to reshape expertise and expert organizations and to politicise them may actually be declining as state and expert regulation become ever more powerful (Adorno and Horkheimer, 1997; Foucault, 2003b; Hardt and Negri, 2000; Harney, 2005).

Such a view would endorse a Frankfurt School analysis of expertise as something which undermines people even after they have laboured to give it life (Adorno and Horkheimer, 1997). Thus expertise comes to control and emasculate us despite our scepticism and distrust of it. And rather than something that is weakened by our unease and wariness both it and the organizations that give it refuge, gain increasing administrative regulation over our lives through their seeming 'rationality' and through our collective ontological fragmentation. In this world our very lack of shared ontology, shared being and practise will weaken rather than strengthen our capacity to influence knowledge legitimation – consciousness may not be enough. Furthermore, in such a world expertise will create, perceive, and mediate risk in subjective and political ways. In this world a non-ontologically created knowledge of risk will not be egalitarian, it will not be everywhere and it will not create inclusion. Instead, although it will claim knowledge is contested, by not examining daily practice and struggle, it will divert resources to the potential risks of 'us' – the West, the middle class, the powerful – rather than the risks of the 'other'. Perhaps alongside the rigour of his work, it is Beck's reluctance to suggest such a pessimistic future that has helped make his vision more palatable to experts, governments, organizations and ourselves.

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