WHEN PRUDENCE IS RECKLESS:

RETHINKING THE ROLE OF PROJECT RISK MANAGEMENT

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Abstract

Despite the widespread use of project risk management, the results of such efforts are often underwhelming. Do project risk management practices somehow miss the point? To explore this idea I use a critical management studies framework to study project risk management. The approach prescribed in the Project Management Institute's Project Management Body of Knowledge is compared to the very different approach of a professional project manager. A theorised analysis of the difference between these approaches finds that they employ the logic of different knowledge-constitutive interests thereby making them suitable for different purposes. The study concludes with a discussion of how the results of this analysis can be presented to practitioners in a way consistent with the emancipatory agenda of critical management studies.

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Introduction

Is it always rational to plan for a risky future? The Project Management Institute (PMI) advises project managers facing uncertain threats to their project objectives to use project risk management. But time and cost overruns continue to afflict projects despite the use of these techniques (Williams, 2004a). One researcher regards the unmodified application of project risk management as "unsatisfactory for making decisions or even for setting priorities" (Barber, 2003, p. 7). How then can the use of project risk management then be rational? Can prudence be reckless?

Project management has been defined as "the application of knowledge, skills, tools and techniques to project activities to meet project requirements" (Project Management Institute, 2004, p. 8). The influential CHAOS Report (The Standish Group, 1995) reviewed over 8000 information technology application development projects and found that only 16% came in on time and on budget. Surely the limited success of projects indicates that some aspect of project management is at fault.

Project management first achieved prominence in the 1960s in firms that carried out complex tasks or faced dynamic operating environments (Kerzner, 2001, p. 49). Project management can thus be viewed as an organisational innovation designed to improve control over burgeoning internal complexity and an increasing dynamism in competitive conditions. Project risk management can be seen as a further development aimed at extending this control to better deal with internal or external risks.

Current trends in corporate governance render organisations amenable to the further adoption of project risk management. In the wake of corporate scandals such as the demise of Enron, the United States government passed the

Sarbanes-Oxley act in 2002 (Buchanan, 2004). Buchanan (2004) observes that this legislation places new internal control responsibilities on directors, thereby advancing the adoption of enterprise risk management. Weaver (2005) discusses the impact of Sarbanes-Oxley and similar regulatory initiatives in Europe and Australia on project management. He expects that this legislation will require project managers to produce accurate predictions of project cost and duration, implement effective project monitoring and control systems, produce 'proper' risk assessments, and be far more open and honest when dealing with project stakeholders (2005, pp. 3-4). Corporate boards will demand these changes in project management to enable them to fulfil their new internal control responsibilities.

The growth of project management over the last four decades has been impressive. The Project Management Institute (PMI), formed in the United States in 1969 to promote the professionalisation of project management, had 7500 members by 1990 (Meredith & Mantel, 2003, p. 5). Its membership grew 35% in the year to July 2005 to reach 200,000 members worldwide (Project Management Institute, 2005).

The PMI publishes *A Guide to the Project Management Body of Knowledge* (hereafter PMBOK, Project Management Institute, 2004). This document aims to "identify that subset of the Project Management Body of Knowledge that is generally recognized as good practice" (Project Management Institute, 2004, p. 3). First published in 1987, the PMBOK is now in its third edition. It has the status of a U.S. national standard, and through extensive distribution has become the *de facto* global standard (Hodgson & Cicmil, 2004, p. 7). The PMBOK describes project management as a number of knowledge areas, each of which is broken down into a set of discrete processes. These processes are described in terms of their inputs, tools and techniques and outputs. The

knowledge and practices described in the PMBOK are intended for widespread use and are claimed to be "applicable to most projects most of the time" (Project Management Institute, 2004, p. 3).

Hodgson and Cicmil (2004, p. 4) implicate the PMI and the PMBOK in promoting a universal, abstract rationality over an embodied and reflexive rationality in the management of projects. The limited success of projects challenges the PMBOK's assertion that project management can be best achieved by applying abstract and generalisable knowledge. The PMBOK would dispute this, holding the project manager responsible for accomplishing the project objectives (Project Management Institute, 2004, p. 8) and determining the mix of practices and knowledge applicable to a given project (Project Management Institute, 2004, p. 3).

If the practices prescribed in the PMBOK have detrimental effects on project outcomes, how do project managers go about making their projects a success? In particular, given recent trends in corporate governance, how do project managers go about project risk management? Such questions call for empirical studies of project managers on the job. If the actual practice of project managers differs from that prescribed in the PMBOK then this might lead to a better understanding of what makes projects a success.

Perhaps the very form of rationality, or logic, underpinning the project risk management practices prescribed in the PMBOK is unable to grasp the character of reality to which they are applied. The work of famed German philosopher of rationality Jürgen Habermas provides a productive body of theory to explore this idea. Habermas departs from an everyday notion of rationality to recognise three kinds of truth, or 'knowledge-constitutive interests': technical, practical and emancipatory (How, 2003, p. 52). Like many management practices, project risk management seeks control of the social and

natural environment. Habermas would classify this as instrumental action, or action in the technical interest. How do the other dimensions of rationality fare with the practice of project risk management?

The literature review that follows aims to examine the rationality of the practice of project risk management, evaluated in terms of Habermas's technical and practical interest. As foreshadowed above, examples from the literature find project risk management wanting when judged in terms of its own instrumental rationality. A more involved analysis is needed to evaluate the workings of project risk management from the vantage point of the practical interest, necessitating a more detailed examination of Habermasian critical theory. This evaluation finds the PMBOK's version of project risk management to be deficient when judged in the practical interest: Indeed, it is implicated in the 'colonisation of the lifeworld.'

Habermas introduced the concept of an 'ideal speech situation,' where the truth, rightness or sincerity of the validity claims implicit in conversation can be challenged, all participants in a discussion have an equal opportunity to speak, and all non-verbal elements have been bracketed off to produce a true consensus (Brand, 1990, pp. 19-20). This ideal speech situation provides a standard against which the communicative rationality of human communication processes can be assessed. Therein lies the contribution of a Habermasian critical study: it can provide a yardstick for evaluating the emancipatory (or rationalising) potential of human practices. Reflecting on this strong point led me to my research question: How might the practice of project risk management be redefined to endow it with emancipatory potential?

To explore this question I look at the risk management practices of a project manager working in the New Zealand local government sector. His distinctive approach achieves a notably different balance between contributions in the

technical and practical interest. A comparison of his approach with the version described in the PMBOK is followed by an analysis of its workings and its contribution in terms of different knowledge-constitutive interests. The study concludes with a consideration of how this analysis can contribute towards a transformative redefinition of project risk management.

Literature Review

I start the review that follows by introducing current project risk management practice. Then practitioner-oriented research is reviewed to evaluate project risk management in terms of its own instrumental rationality. Following this elements of Habermasian critical theory are outlined and used to assess the consequences of project risk management judged in terms of Habermas's practical knowledge-constitutive interest. Finally I locate this study against an emerging poststructuralist literature on project management.

Introducing project risk management

In advocating the use of project risk management, Wideman observed that:

> Experience on many projects reveals poor performance in terms of reaching scope, quality, time and cost objectives. Many of these shortcomings are attributed either to unforeseen events, which might or might not have been anticipated by more experienced project management, or to foreseen events for which the risks were not fully accommodated. (1992, p. II-1)

Wideman's observation manages to encapsulate three central ideas in risk management practice: identifying events with negative consequences, estimating their probability and impact, and responding appropriately. Wideman's process requires that we first identify 'risk events.' We then estimate the probability that each risk will occur, and the impact on the project of its occurrence. Thirdly we determine an appropriate response to the risk.

It is in this third stage that project risk management lays a claim to rationality. Equating monetary value to utility, the expected value of the risk can be calculated as first described by Bernoulli in 1739:

If the utility of each possible profit expectation is multiplied by the number of ways in which it can occur, and we then divide the sum of these products by the total number of possible cases, a mean utility will be obtained, and the profit which corresponds to this utility will equal the value of the risk in question. (1954, p. 24)

This concept of expected value allows us to evaluate risk responses. Let net response gain for a given risk response be defined as the gain in expected value less the cost of applying the risk response. The rational risk treatment is then the response among all possible alternatives that has the greatest net response gain.

The risk response planning process prescribed in the PMBOK (Project Management Institute, 2004) offers a number of categories of risk treatments. If the expected value of the untreated risk is sufficiently high, one might be accept the risk (p. 263). Otherwise, one might treat the risk by transferring it, for example by insuring against it. Alternatively, one could avoid the risk by adopting a new course of action through which the risk cannot occur, or one could mitigate the risk by taking action to reduce its probability or impact (pp. 261-2). The PMBOK permits more sophisticated techniques of modelling and simulation for quantitative risk analysis (p. 258), though these analyses are but a prelude to the core decision-making process of risk response planning, which is framed by Bernoulli's eighteenth-century formulation of expected utility.

Practitioner-oriented research

Williams (1995a) produced a comprehensive classified bibliography of practitioner oriented project risk management research. He started his review with studies demonstrating that projects often fail to meet their objectives. He then arranged the remaining papers into sections that consider the definition

and quantification of risk, the analysis of risk impacts, and the broader aspects of risk management. Williams (1995b, 1998) twice updated his classified bibliography. In his latest update he stated that "this will probably be the last such Working Paper, as the field [of project risk management] has now become established" (Williams, 1998, p. 2).

Although Williams (1998) found many papers commending project risk management, he noted that its practical application has not been without difficulties. He cited Rowley (1992) who found instances of increases in project cost and duration in the order of 150% due to the extensive formality of the risk management process employed. Barber (2005) studied nine large projects, finding that each of these had a number of significant or severe 'internally generated risks', risks created by the organisation itself through its own "rules, policies, structures, actions, decisions, behaviours or cultures" (p. 584). Although project managers frequently recognised and treated these internally generated risks, Barber found that these risks were rarely entered in the 'risk register' and controlled under a formal risk management process. These risks were treated differently because they involved the decisions of powerful project stakeholders, the poor performance of project team members, or the standard operating procedures imposed on the project (p. 588). Barber found that:

> Internally generated risks are common, significant and difficult to manage. Despite their importance as a class of risk, the results imply that common process-driven approaches are inadequate to deal with internally generated risks. (p. 589)

Williams (2004a) found that that project time and cost overruns continue to occur despite the use of the practices prescribed in the PMBOK (Project Management Institute, 2004). In another study Williams (2004b) presented a

hypothetical situation to illuminate how 'vicious circles' of action and consequence may operate to produce unforeseen negative results.

For both Williams and Barber the problem was that conventional conceptions of project management fail to correctly account for "behaviour arising from the complex interactions of various parts of the project" (Williams, 2004a). For these researchers the problem of poor project risk management outcomes arising from complex project interactions can be solved through the use of more sophisticated risk models. System models are used by Barber (2003) to illustrate how unforeseen outcomes can arise through complex interactions. Williams (2004a) incorporates 'soft' factors to improve the handling of complex interactions in his system dynamics models.

Habermasian critical theory

Habermasian critical theory offers an alternative framework for analysing project risk management. This section will provide a brief overview of aspects of Habermasian critical theory that will be subsequently used to critique project risk management.

Habermasian critical theory distinguishes between two modes of coordination of action: social integration and functional integration. Social integration occurs with the coordinated action of individuals interacting in their capacities as agents, and takes place in the 'lifeworld' (Cooke, 1994, p. 6). Functional integration bypasses the consciousness of individuals, taking place in the 'system', consisting of "those aspects of society that have been detached from man's [*sic*] immediate cultural context, and which follow a more independent objectifying logic" (Alvesson & Sköldberg, 2000, p. 116). Money and legal power provide this logic, coordinating action in the system. Project risk management, when formulated as a prescriptive decision-making process

driven by expected monetary value, is of the system: It directs action independently of any individuals involved.

Cooke (1994, p. 135) outlines Habermas's description of the emergence of the system thus: The growing complexity of modern societies results in ever-greater differentiation in the practices, actions and interpretations of individuals. With this increasing differentiation people can no longer rely on the common "culturally transmitted and linguistically organised stock of interpretive patterns" (Habermas, 1987, p. 124) of the lifeworld to coordinate action, and turn instead to 'communicative action' for reaching understanding. But beyond a certain point the resulting communicative demands become so burdensome that further recourse is found in the uncoupling of action coordination from the context of the lifeworld. Action is instead coordinated through the system, directed by 'steering media' of money and legal power, leading to the growth and development of norm-free economic and administrative subsystems.

The system has grown to the point that "the economy and the state penetrate, via money and power, into the Lifeworld and destroy communicative processes where these remain necessary, specifically in cultural reproduction, social integration and socialisation" (Brand, 1990, p. 54). This is the malady Habermas terms 'colonisation of the lifeworld', claiming that "the mass of psychological and social problems which burden the modern welfare affluent society can be regarded [to have occurred] as a result of this" (Alvesson & Sköldberg, 2000, p. 116). Habermas frames the challenge thus:

> The point is to protect areas of life that are functionally dependent on social integration through values, norms and consensus formulation, to preserve them from falling prey to the systemic imperatives of economic and administrative subsystems growing with dynamics of

their own, and to defend them from becoming converted over, through

the steering medium of the law, to a principle of sociation that is, for

them, dysfunctional. (Habermas, 1987, pp. 372-3)

Habermasian critique of project risk management

Critical theory aims to serve the emancipatory interest, increasing the "potential for autonomous, responsible human action" (Stablein & Nord, 1985, p. 18). To do this "Critical Theory seeks to dialectically combine in a more *reflective* way the complementary virtues of the other two interests" (How, 2003, p. 53). This can be done in critical management studies through the production of insight, of critique, and through transformative redefinition (Alvesson & Deetz, 2000). This section presents a critique of project risk management.

Project risk management involves a number of technical and management practices with the aim of controlling project risks. It is therefore explicitly designed with goal-oriented instrumental rationality in mind, although earlier sections presented evidence that this aim is not always achieved. Unlike earlier critical theorists Habermas does not regard instrumental rationality as necessarily negative: He sees it as fundamental to our modern relationship with nature (How, 2003, p. 51). Instrumental rationality only becomes a problem when it is implicated in the colonisation of the lifeworld.

Where vulnerable areas fall prey to project risk management, the further colonisation of the lifeworld is advanced. We can establish the frontier of this colonisation process by noting that instrumental rationality requires choosing between alternative actions to achieve the preferred outcome. A situation of risk exists where we know the probability of each outcome, whereas "uncertainty is the case when the set of possible outcomes can be stipulated,

but the probabilities are completely unknown" (Bell, 1974, cited in Cooper & Burrell, 1988, pp. 95-6). Power observed that the distinction between risk and uncertainty "can be read in part as a contingent distinction between the measurable and the unmeasurable; yesterday's unmeasurable uncertainty can be today's carefully managed risk" (2004, p. 777). 'Meta-measures' are invented to meet the demand for the measurable (Power, 2004). When the domain of the measurable expands, uncertainty is converted into risk, and the frontier of colonisation by the system advances. When this affects vulnerable areas, project risk management is at the frontier of colonisation of the lifeworld, the remedy for which is to reclaim the affected arenas for communicative action.

Turning to investigate risk decision-making, we can productively employ the work of Forester (1989), who explores how communicative distortions limit rationality. He takes as his starting point the concept of bounded rationality from Herbert Simon. Simon (1957) considered the consequences for the rationality of a decision-maker who has limited knowledge and time. He found that this restricts the number and composition of the set of alternatives to be evaluated, and influences the selection criteria used. Thus decision-makers can never be sure of selecting the optimum alternative. Instead, they 'satisfice', sequentially generating alternatives until one is found that exceeds their variable 'aspiration threshold.' Simon termed this situation 'bounded rationality'. An interesting example of Simon's variable aspiration threshold as applied to risk management is found in Starbuck and Milliken's (1988) study of decision-making in the lead up to the Challenger space shuttle disaster. Starbuck and Milliken found support for the idea that "success makes a subsequent success appear more probable, and failure makes a subsequent success seem less likely" (1988, p. 323). After a series of successful launches,

this resulted in incremental changes that set NASA "creeping toward a conclusive demonstration of some kind" (p. 337).

Forester (1989), following a Habermasian approach, extended Simon's theory to include the influence of communicative distortions on the production of the set of alternatives and selection criterion used in a social decision-making process. He classified communicative distortions as either inevitable (such as idiosyncratic personal traits) or socially unnecessary. Forester further subdivided socially unnecessary communicative distortions into those that are socially ad-hoc (such as wilful unresponsiveness or interpersonal deception) and those that are socially structural. He identified three modes of power that produce structural communicative distortions: control of decision-making, agenda setting and needs shaping. It is these that influence the non-verbal context when risk decision-making is considered as communicative action.

Forester, writing on public planning practice, then suggested strategies planners could use to counter socially unnecessary communicative distortions. He challenged planners to anticipate and respond to counter the effects of structural attention-directing processes. These processes direct attention in two ways: "first, productively, attending to some goals and not others; and, secondly, reproductively, by refashioning existing social relations and conventional commitments, preferences, roles, and responsibilities" (John Forester, 1989, p. 158).

Along the lines of Forester's productive attention-directing processes, Tierney (1999) asked us to consider how "risk calculations are constructed and on the processes through which some conceptions of risk, rather than others, come to be viewed as valid, and by whom" (p. 223). For a given risk management process, examining the risk impacts entered in the risk register will reveal the goals being served. Each impact is described in a manner that

tells us the way in which interests will be harmed if the risk event occurs. For an example of a reproductive attention-directing process, we might look to Tierney (1999), who observed that although earthquakes "are acts of nature…earthquake disasters – the deaths, injuries, economic losses, and social disruption that result when the earth trembles – are social in origin" (1999, p. 236). The socially reproductive element of the aftermath of an earthquake can be seen when one considers the post-quake situation of those with house insurance versus those without; those who own vehicles, enabling them travel to stay with family or friends versus those who don't; or those who live in buildings built to modern building codes versus those who live in inferior housing.

In summary, then, risk management can be seen as contributing to the expansion of the system, displacing social coordination based on shared understanding arrived at through communicative action. Where this system expansion encroaches upon cultural reproduction, social integration or socialisation, psychological and social problems ensue. When this occurs, project risk management is at the frontier of colonisation of the lifeworld, the remedy for which is to reclaim the affected arenas for communicative action.

Habermasian critical theory offers an alternative explanation as to why the decision-making of project risk management often fails to serve even the technical interest. Although the technical ideal of unbounded rationality is unattainable, it is not rendered so solely by random error: Both socially ad-hoc and structural communicative distortions influence the risk decision-making process. These communicative distortions act to constitute the goals served by the risk management process. These goals can be discerned by examining the risk impacts detailed in a project's risk register. The Habermasian remedy for

socially unnecessary communicative distortions is to employ strategies to address interpersonal manipulation and the underlying structural influences.

Poststructuralist analyses of project management

The last five years have seen the appearance of academic research employing poststructuralist analyses of project management. Focusing on the power/knowledge connection Lindgren and Packendorff (2003) talk of 'project prisons' where people's space, time and souls are subject to a Foucauldian prison-like discipline. Along similar lines Hodgson (2002) looks at how the professional discipline of project management as serves to 'discipline' the behaviour of project managers. Linehan and Kavanagh (2003) explore the consequences of the postmodernist critique of representation (Rosenau, 1992, p. 94) for understanding learning and forms of knowing in project groups. Hodgson and Cicmil (2004) incorporate poststructuralist thinking about the centrality of discourse (Alvesson & Deetz, 2000, p. 95) to examine the constitutive, reifying and naturalising processes that result in projects being viewed as 'real', with the PMI and PMBOK as cornerstones of the infrastructure supporting these processes.

Each of these articles renders project management problematic in interesting and useful ways. Particular strengths of this poststructuralist treatment of project management arise from the employment of a sophisticated analysis of the processes involved in the discursive production of objects and a more nuanced exploration of power that comes with the recognition of the power/knowledge connection. However poststructuralist approaches lack means for the comparative evaluation of practices. In contrast Habermasian critical theory provides us with a rich set of concepts that may be used for this purpose, including communicative rationality, the counterfactual ideal speech

situation and the idea of different types of human interests. Poststructuralist thought lacks such a yardstick, treating all practices with suspicion. Thus Hodgson and Cicmil are restricted to attempting "to open up the project to alternative perspectives" (2004, p. 20) without stating what these might be, and Linehan and Kavanagh aim to recontextualise forms of knowing "in a manner that creates more generative possibilities for theory and practice" (2003, p. 20) without sketching more than an outline of an alternative.

This study aims to complement this recent poststructuralist work with a study that goes beyond criticism to stimulate alternatives through the comparative evaluation of practices. Habermas's critical theory provides yardsticks for this purpose. Drawing on a critical theory framework, I hope to not only critically scrutinise project risk management practices, but also to come up with a transformative redefinition useful to practitioners.

Method

I started this study with the aim of revealing the clandestine ends to which project members put project risk management, using purposeful sampling (Maxwell, 1996), to choose a project to study that would be likely to exhibit a high degree of risk management related social interaction. I hoped to find a project that required the integration of several technologies, thereby encouraging its project manager to turn to technical experts for risk assessment. In studying this project I expected to find that the risk management processes employed fell far short of the promise intrinsic to project risk management practices. Such a study would serve the purposes of the critical tradition, one of which is to "unsettle, to disturb, and ultimately, to undermine the stability and reputability of positive forms of knowledge" (Knights, 1992, p. 520).

To this end I arranged for a request for a participant to be put out through the mailing list of the Project Management Institute of New Zealand (PMINZ), the local chapter of the PMI. Several people responded to the request and a participant was chosen. It soon became apparent, however, that the participant's project was unlikely to yield examples of the politically distorted risk assessments that were to serve the starting point of the critique of project risk management practices. The participant employed his own set of risk management practices on his projects, which were successfully progressing towards meeting their objectives.

On the empirical study of project management Hodgson (2002) observes:

> Any attempt to analyse Project Management which reflects on the discipline *in practice* [author's emphasis] is open to the criticism that it is unrepresentative of the 'true' nature of Project Management. This criticism, however, reproduces the highly questionable assumption that

there exists a 'true', unitary Project Management out there to be studied. (p. 809)

If we accept that the promise of 'true' project risk management is often not realised (as demonstrated through unsatisfactory project outcomes) we might then take this as a starting point, and turn instead to study successful project risk management *in practice* to critique the ideal type and produce a transformative redefinition of project risk management (Alvesson & Deetz, 2000). This line of thought led to my revised research question: How might the practice of project risk management be redefined to endow it with emancipatory potential?

I interviewed the project manager three times, over a period of five months. This was done to allow the investigation of process as well as stability, thereby allowing an investigation of "how symbols and behaviour vary over time and setting" (Silverman, 1993, p. 48). The interviews explored the organisational context of the project, the risk management strategy employed by the participant, his perception of the risks faced by the project, and his recollection of recent interactions and events that had a material impact on the project. In line with Maxwell's (1996) advice I 'pilot-tested' the questions for the first interview in a mock-interview of a project manager at my workplace to see how the questions might work in practice.

Alvesson (2003) argues for a 'reflexive pragmatism' in qualitative interviewing, entailing one "working with alternative lines of interpretation and vocabularies and reinterpreting the favored line(s) of understanding through the systematic involvement of alternative points of departure" (p. 14). Alvesson presents eight metaphors, each offering a different way of understanding the interview. To make use of this reflexive pragmatism I first produced a set of 'claims' from the transcripts. An example claim from the first

interview was 'the project benefited from spending a lot of attention to risks up front, then managing them through the project.' These claims were then assessed against Alvesson's eight metaphors. Our example claim might be viewed through the 'moral storytelling' metaphor, with the participant presenting himself as morally superior to those project managers who recklessly disregard their project risks. Alternatively we could view the example through the 'play of the powers of discourse' with the powerful project management discourse speaking through the participant: Indeed the PMBOK states "to be successful, the organization should be committed to addressing the management of risk proactively and consistently throughout the project" (Project Management Institute, 2004, p. 242). I classified each claim by the metaphor it could most plausibly represent.

The next stage of analysis consisted of a comparison of the participant's project risk management practices with those advocated in the PMBOK. To appreciate the generative potential in the participant's practices, we must first understand how these differ from 'true' project risk management.

In the literature review above I demonstrated how the advent of project risk management could be seen as an example of 'colonisation of the lifeworld' from a Habermasian perspective. The antidote for this might be Habermas' communicative action, which "stands in contrast to instrumental action as something that is oriented towards reaching mutual agreement….[and] as such, the rationale for communicative action provides a means of challenging the instrumental form that so undermined the hopes of Horkheimer, Adorno and Marcuse" (How, 2003, p. 49). The participant's project risk management practices are analysed from a Habermasian perspective. This is done in conjunction with a parallel analysis of the practices suggested in the PMBOK, to delineate the distinctive characteristics of each approach.

The final section discusses implications of the study for the practice of project risk management and for further research. The conceptual foundation of critical studies precludes the wholesale application of the methodological bounty of the natural sciences in the way that is found in normative studies. Therefore the consequences of the ontological and epistemological foundations of critical studies must be appraised to determine how the post-analysis discussion might proceed.

Deetz (1996) proposed a two-dimensional model for classifying research. The origin of research concepts and the relation of research to the existing social order comprise the dimensions of Deetz's model. The concepts used in research may have local/emergent or *a priori* origins. Critical studies are found at the *a priori* end of this axis where they "note the presence of values and distortions in normative work and hold out the hope for a better, purer form of knowledge based in processes that include more interests and means of analysis in the work" (Deetz, 1996, p. 196). Additionally, research can be thought of as taking a consenting or dissenting posture towards the existing social order. Critical studies are positioned at the dissenting end of this continuum. This type of study "does not deny the significance of an ordered observed world, rather, it takes it as a powerful (and power filled) product and works to break objectifications to show fuller potential and variety than is immediately apparent" (Deetz, 1996, p. 198).

Further, Johnson and Duberley (2003) argue that critical theory combines an ontological realism with an epistemological subjectivism. For Johnson and Duberley:

> A realist view of ontology assumes that social and natural reality has an independent existence prior to human cognition whereas a subjectivist ontology assumes that what we take to be reality is an

output of human cognitive processes. (2003, p. 1282)

The ontological realism of critical studies can be seen in Habermas's view of instrumental rationality as an appropriate logic for controlling the natural environment. A consequence of this is that Habermas permits people in areas experiencing recurring disasters due to natural hazards (such as flooding) to employ instrumental reasoning regarding the increased likelihood of future disasters and take appropriate action (such as building houses on high ground).

The epistemological subjectivism of critical studies comes into play when instrumental rationality is applied to human subjects. As discussed earlier, with Habermas this occurs with the colonisation of the lifeworld: areas once the domain of intersubjective understanding fall prey to instrumental rationality. Epistemological subjectivism enables critical studies to identify a social cause for this state of affairs, a dissenting posture towards the existing social order enables critical studies to deem this state of affairs problematic, and an *a priori* origin of concepts in critical studies enables a better future to be envisaged.

These considerations find direct parallels in Alvesson and Deetz's (2000) identification of the tasks of critical management studies as the production of insight, critique, and transformative redefinition. The production of insight and critique is performed in the analysis section of this report, with analyses of project risk management as described in the PMBOK and in interviews with Kevin. The task remaining for the discussion section is the production of transformative redefinition, or "ways of seeing and thinking and contexts for action in which groups can express themselves and act" (Alvesson & Deetz, 2000, p. 145). Transformative redefinition is not simply researchers producing new theories to displace the old. Instead, this remaining task involves:

…facilitating members' ability to comprehend themselves and their

problems in new ways…enabling the development of knowledge and transformative strategies that are practically adequate for coping with and resolving members' own problems. (Johnson & Duberley, 2003, p. 1292)

These considerations call for a type of discussion that is quite different from that found in normative studies. They motivate the development of a metaphorical representation of the results of the Habermasian analysis in the discussion section, to maintain the problematic status of the normative project risk management formulation and to return agency to project manager practitioners.

Analysis

The study's participant, whom I shall call Kevin, works as a project manager for a city council. He joined the council three and a half years ago, and now works with two other project managers in the council's city services unit. Kevin holds the Project Management Professional (PMP) certification awarded by the PMI. To gain PMP certification one needs to have a number of years appropriate experience as a project manager and to pass an exam based on the PMBOK.

During the period of the study Kevin had two major projects on the go, each involving the design and construction of public amenities. The largest project was coming to its close. Kevin reported that this project had proved to be a challenge as among amenities commonly built by councils, it was one of, "the two most difficult buildings you can build." Kevin took over project management part way in to this project when he joined the council. Early on he held a risk workshop:

> We got a whole lot of…stakeholders involved, the design team, councillors…[and] some council staff involved in the workshop…I think it brought home to the councillors some of the issues that perhaps they weren't aware of, that needed to be addressed…They tend to be laymen in the sense of design professionals and often don't appreciate what goes on behind the scenes, and I think it really opened their eyes to some of the problems that have occurred…[with the construction of this type of amenity] around the country over the years and what needs to be done to try and reduce similar things happening on our project.

The participants at this risk workshop identified around 400 risks. Kevin sees the risk management process as broader than that detailed in the PMBOK:

> There's a wonderful book called 'The Management of Projects' by a chap called Peter Morris…He summarised the history of projects around the world, the big projects, like Apollo and even D-day, a whole history of projects and discussed it, and summarised it towards the end, about what went right and what went wrong….What came out of it was, and this author's been quite an advocate of the PMBOK and the PMI process, was…[that the PMBOK risk management process is] far too narrow, because a lot of the major projects that have had problems…have failed for reasons that are outside the traditional scope of what PMBOK talks about as the scope of project management.

This insight has led Kevin to employ a project risk management process quite different from that detailed in the PMBOK. Later sections explore his distinctive approach.

The PMBOK prescription for project risk management

In later analyses I use the PMBOK prescription for project risk management as a reference point for detecting novel elements of Kevin's approach. The PMBOK contains nine 'knowledge areas', of which project risk management is one. The project risk management knowledge area is further broken down into six 'processes', each of which has designated inputs, tools and techniques and outputs. The six processes of project risk management and their corresponding inputs, tools and techniques and outputs are shown in Figure 1, taken from the PMBOK (Project Management Institute, 2004, p. 241).
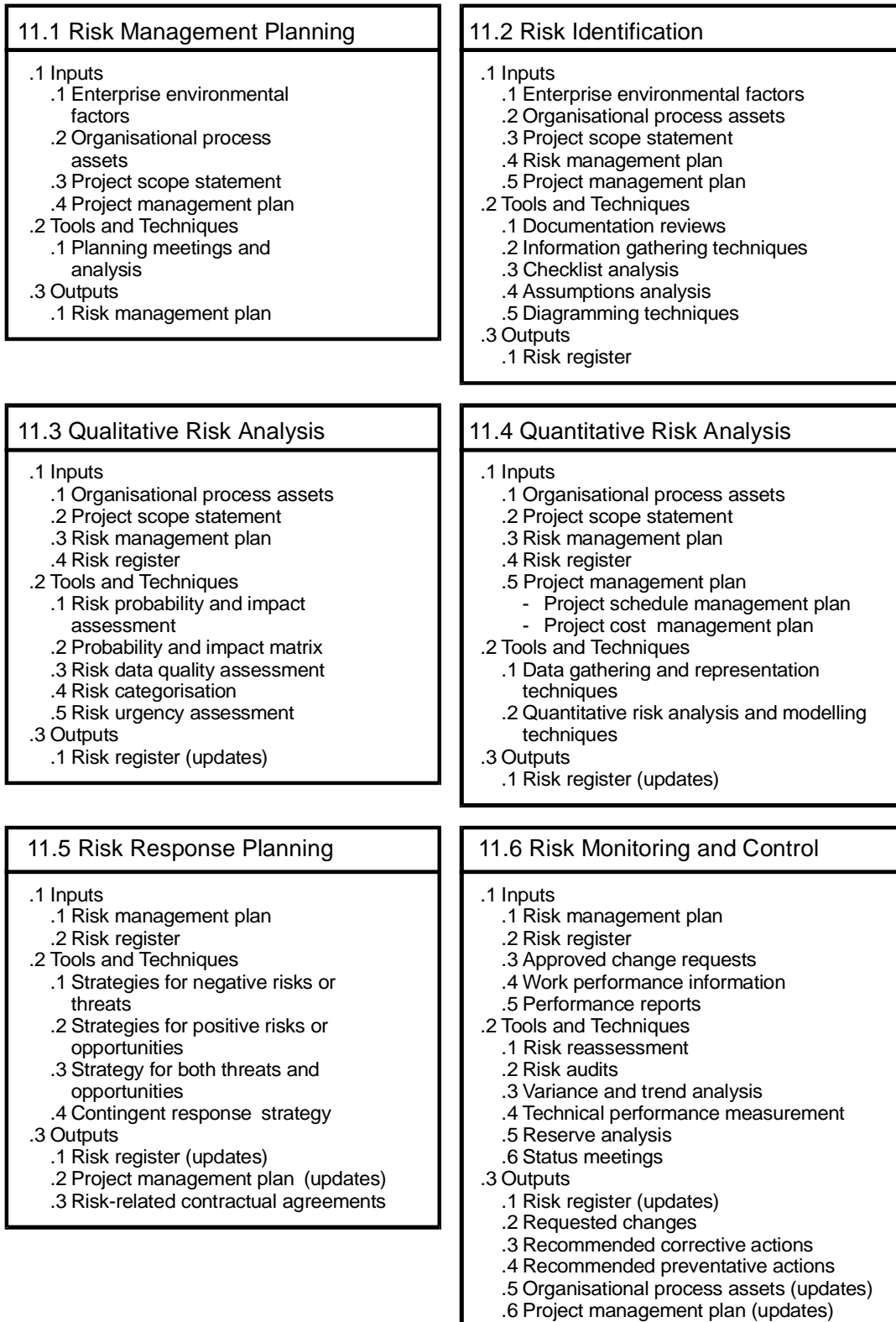
11.1 Risk Management Planning

.1 Inputs
    .1 Enterprise environmental
       factors
    .2 Organisational process
       assets
    .3 Project scope statement
    .4 Project management plan
.2 Tools and Techniques
    .1 Planning meetings and
       analysis
.3 Outputs
    .1 Risk management plan

11.2 Risk Identification

.1 Inputs
    .1 Enterprise environmental factors
    .2 Organisational process assets
    .3 Project scope statement
    .4 Risk management plan
    .5 Project management plan
.2 Tools and Techniques
    .1 Documentation reviews
    .2 Information gathering techniques
    .3 Checklist analysis
    .4 Assumptions analysis
    .5 Diagramming techniques
.3 Outputs
    .1 Risk register

11.3 Qualitative Risk Analysis

.1 Inputs
    .1 Organisational process assets
    .2 Project scope statement
    .3 Risk management plan
    .4 Risk register
.2 Tools and Techniques
    .1 Risk probability and impact
       assessment
    .2 Probability and impact matrix
    .3 Risk data quality assessment
    .4 Risk categorisation
    .5 Risk urgency assessment
.3 Outputs
    .1 Risk register (updates)

11.4 Quantitative Risk Analysis

.1 Inputs
    .1 Organisational process assets
    .2 Project scope statement
    .3 Risk management plan
    .4 Risk register
    .5 Project management plan
       - Project schedule management plan
       - Project cost management plan
.2 Tools and Techniques
    .1 Data gathering and representation
       techniques
    .2 Quantitative risk analysis and modelling
       techniques
.3 Outputs
    .1 Risk register (updates)

11.5 Risk Response Planning

.1 Inputs
    .1 Risk management plan
    .2 Risk register
.2 Tools and Techniques
    .1 Strategies for negative risks or
       threats
    .2 Strategies for positive risks or
       opportunities
    .3 Strategy for both threats and
       opportunities
    .4 Contingent response strategy
.3 Outputs
    .1 Risk register (updates)
    .2 Project management plan (updates)
    .3 Risk-related contractual agreements

11.6 Risk Monitoring and Control

.1 Inputs
    .1 Risk management plan
    .2 Risk register
    .3 Approved change requests
    .4 Work performance information
    .5 Performance reports
.2 Tools and Techniques
    .1 Risk reassessment
    .2 Risk audits
    .3 Variance and trend analysis
    .4 Technical performance measurement
    .5 Reserve analysis
    .6 Status meetings
.3 Outputs
    .1 Risk register (updates)
    .2 Requested changes
    .3 Recommended corrective actions
    .4 Recommended preventative actions
    .5 Organisational process assets (updates)
    .6 Project management plan (updates)

Figure 1. PMBOK project risk management processes

Risk management planning is the first processes of the PMBOK risk management knowledge area. It involves "deciding how to approach and conduct the risk management activities for a project" (Project Management Institute, 2004, p. 242). This entails choosing risk management procedures, assigning responsibilities for these and estimating the costs involved in project risk management throughout the project. The second process is risk identification, where risks are identified and documented in a risk register. Qualitative risk analysis initially involves estimating the probability of each risk and assessing its impact on the project. Following this, qualitative risk analysis then calls for risks to be prioritised by ranking a risk metric constructed by multiplying each risk's likelihood by its impact. The ranking of this risk metric is intended to direct attention to those risks that are likely to occur or that have a catastrophic impact. The next process is optional, and involves applying quantitative risk analysis to model the project and the risks to better understand the impact of the risks on the project. The fifth process, risk response planning, involves choosing a way to treat each risk. These five processes occur during the planning of a project. The final process, risk monitoring and control, continues throughout the project, and involves tracking project progress and periodically revisiting the risks faced by the project.

Kevin's project risk management practices

As project manager Kevin facilitated the risk management planning for the two projects he discussed. At Kevin's first risk workshop, he recalled that:

> Because the various stakeholders in the room at that particular meeting were relatively unfamiliar with this process, I actually prepared some work in advance for them to read, and then I basically presented that at

the workshop and said 'lets brainstorm this a bit, are you happy with it,' and they decided generally speaking they were pretty happy with it, and they understood it, and then we went ahead from there.

Participants identified risks and estimated their probability and impact at Kevin's risk workshops, thereby carrying out the functions of the PMBOK's risk identification and qualitative risk analysis processes. Quantitative risk analysis didn't feature in Kevin's process, and the risk monitoring and control process occurs through the execution of the project rather than at the planning stage.

Kevin found advantage in taking a systematic approach, observing that "everything is to some extent forecastable [*sic,* which] is actually why you do project management." But he perceived limits to the control he can exercise over the project. Kevin described the relationship between his role and that of external project stakeholders:

> It's the organisation, or the client or whatever's project. The project manager's job is to facilitate that project happening. And his job is to do it the best…he or she can, but with the best will in the world there will be issues that are unforeseeable, or foreseeable but have to be managed, and you go into them knowing that they may occur or may not occur, and if they do occur, then you go back to the client and you say, "this is what we've done to manage that risk, or reduce its impact, its now occurred, what do you want to do?"

This fragment reveals Kevin's view that stakeholders ought to be aware of both project risks and the variable nature of project progress. To this end he included city councillors in his risk workshops. The limits Kevin sees to his control of the project and his views on whose project it is allows him to share accountability for the project with the sponsoring organisation/client:

If you flag up a whole lot of issues that can occur to the senior levels of your organisation they can actually help you manage that risk. They can go away, "I recognise Kevin that you're too low level to deal with that, I can deal with the mayor of the next-door city council, and we can help facilitate that."

The alignment of the future actions of the sponsoring organisation/client with the purposes of the project is enabled by the participation of these stakeholders in the risk workshop. Not only did these stakeholders become informed through the risk workshop, they were also able to shape the purposes of the project. Kevin provided participants with scales for assessing risk probability and impact. For probability, a risk with a probability rating of five:

…had a very high likelihood of occurring, and then you went down to say, once a year, and then once every ten years, and once every hundred years, and once every thousand years, very roughly. It was an order of magnitude step every time, you know like an earthquake maybe, a one, basically that's a one in five hundred year event type of thing.

I argued in the literature review that the interests served by the risk management process should be evident from the scrutiny of risk impacts. The PMBOK tells us that "risk impact assessment investigates the potential effect on a project objective such as time, cost, scope or quality" (Project Management Institute, 2004, p. 250). These parameters are traditionally the central concerns of the project manager. Kevin has this to say on project objectives:

I think one of the really important parts of risk management…is to…define your objectives for the project really well…[There are] the traditional scope, quality, cost issues, but projects can both succeed and fail for reasons that are outside those boundaries, like for example your

stakeholders…You can deliver a wonderful project that is on time and on budget on cost but doesn't deliver what the stakeholders wanted, so you've got to…step back a bit early on define what your really important objectives are and that's actually quite a lot of work, a lot harder than people realise.

Kevin's views on project objectives are reflected in his impact scales. He has several of these, based around several 'themes': "budget was one of them, then you might have media interest, there might be legal risk, construction or technical risk…natural hazards, and a couple of other themes." For budget, "a consequence [or impact] four would be…$250,000, and five would be $2.5 million, and then you went downwards as well from three so $250,000 to $2,500 and then $250." Other scales included media exposure, which was arranged so that a five "may be international exposure, negative exposure, you know a four might be…national exposure, three might be local newspaper exposure."

Seeking shared understanding at the risk workshop

The PMBOK offers several information-gathering techniques for the risk identification process, including brainstorming, interviewing and the Delphi technique. The PMBOK states that brainstorming is performed by the project team, "often with a multidisciplinary set of experts not on the team" (Project Management Institute, 2004, p. 247). If Kevin's risk workshop is viewed as a risk identification brainstorming session, then the consultant team falls into the PMBOK's expert category, but what of the councillors? They are not admissible under the PMBOK's technical expert criterion.

Kevin described the consequences of getting the councillors involved in the risk workshop: It "opened their eyes to some of the problems that have occurred" so that "they're a lot more tolerant later on." Thus Kevin did not

simply use the councillors for 'information gathering': his purposes transcended mere technical data collection. From a Habermasian perspective Kevin's risk workshop can be understood as a site for communicative action, which is "action oriented to reaching shared understanding" (Brand, 1990, p. 15). This stands in contrast to PMBOK's recipe for project risk management, which relies ultimately on risk decision-making based on numerical calculation. Kevin's purposes include the pursuit of shared understanding among attendees at the risk workshop.

In the PMBOK, the risk management planning process is the designated conduit for the expression of the sponsoring organisation's/client's 'risk attitudes and tolerances'. These risk attitudes and tolerances "may be expressed in policy statements or revealed in actions" (Project Management Institute, 2004, p. 242). Kerzner (2001) suggests risk tolerance categories of averter, neutral and seeker. However on what reductive basis can the sponsoring organisation/client be treated as a 'unitary actor' (Allison & Zelikow, 1999, p. 31) with a homogeneous risk tolerance? Wouldn't this risk tolerance be expected to differ among stakeholders and to vary for different types of risk? The PMBOK's mechanism for incorporating the sponsoring organisation's/client's risk attitudes and tolerances will prove inadequate if there is material variance in these across stakeholders or type of risk.

As an alternative to 'measuring' stakeholder risk perceptions and attitudes with anonymous questionnaires, Renn puts the case for a "mutual learning and deliberation process" (1998, p. 57). Renn's citizen participation model, designed from a public choice viewpoint, provides for a high degree of 'control mutuality,' defined by Gurabardhi, Gutteling, and Kuttschreuter as being "concerned with the concept of power equity or reciprocity, the empowerment

of community people and the organizations' commitment to deal with the public as a partner" (2005, p. 501).

Renn's mutual learning and deliberation process is a more convincing representation of Kevin's risk workshops than those presented in the PMBOK. Rather than measuring external stakeholder risk attitudes and tolerances and obtaining risk probabilities and impacts from experts, Kevin's risk workshops exhibit a high degree of control mutuality. He achieves this by engaging external stakeholders in the identification of risks and the discussions of their likelihood and consequences. By enlisting the external stakeholders in this manner, Kevin prepares them for the variability in project outcomes that may be expected, and is able to call upon them later for help in achieving project objectives. His practices are aimed at shared understanding, and hence the pursuit of communicative rationality.

Evaluating risk impacts and response strategies

The PMBOK's risk response planning process calls for planned risk responses that are "appropriate to the significance of the risk [and] cost effective in meeting the challenge" (Project Management Institute, 2004, p. 260). I outlined the PMBOK's response strategies of acceptance, transference, mitigation and avoidance in an earlier section. The risk response planning process draws upon analyses performed in preceding processes for assessing risk significance to guide the allocation of the scarce resources available for implementing risk response strategies.

The PMBOK puts forward quantitative risk analysis as an optional process. Risk response planning is guided by the outputs of quantitative risk analysis if this process is employed on a given project. Otherwise risk response planning

is guided by the 'prioritised list of project risks' constructed during qualitative risk analysis.

The risk metric used to rank the prioritised list of project risks is calculated by multiplying each risk's likelihood by its impact. This metric is a meta-measure, defined by Power as "the further aggregation of numbers and the further creation, via statistical and mathematical operations, of ratios and indices" (2004, p. 771). Williams counsels against ranking risks in such a manner, observing that "multiplying impact and uncertainty to 'rank' risks is misleading, since the correct treatment of risks requires both dimensions…it is obvious that 10^{-8} probability of a loss of £10^9 is not the same as a 0.1 probability of a loss of £100" (1996, pp. 185-186). Power, reflecting on meta-measures and the consequences of measurement, noted:

> When the chief risk officer of Enron can write an article entitled 'Aiming at a single metric', the case against measurement begins to look overwhelming. Critical data that cannot be readily quantified are marginalized and rendered invisible, and proxy measures end up representing the thing itself. (2004, p. 775)

Qualitative risk analysis avoids meta-measures, relying instead on probability distributions and probabilistic analyses. These are then used to prioritise risks and to guide the choice of risk response strategies. Probabilistic modelling enables risks and risk treatments to be evaluated in terms of project cost and time objectives. An example cost cumulative probability distribution graph is shown in Figure 2.
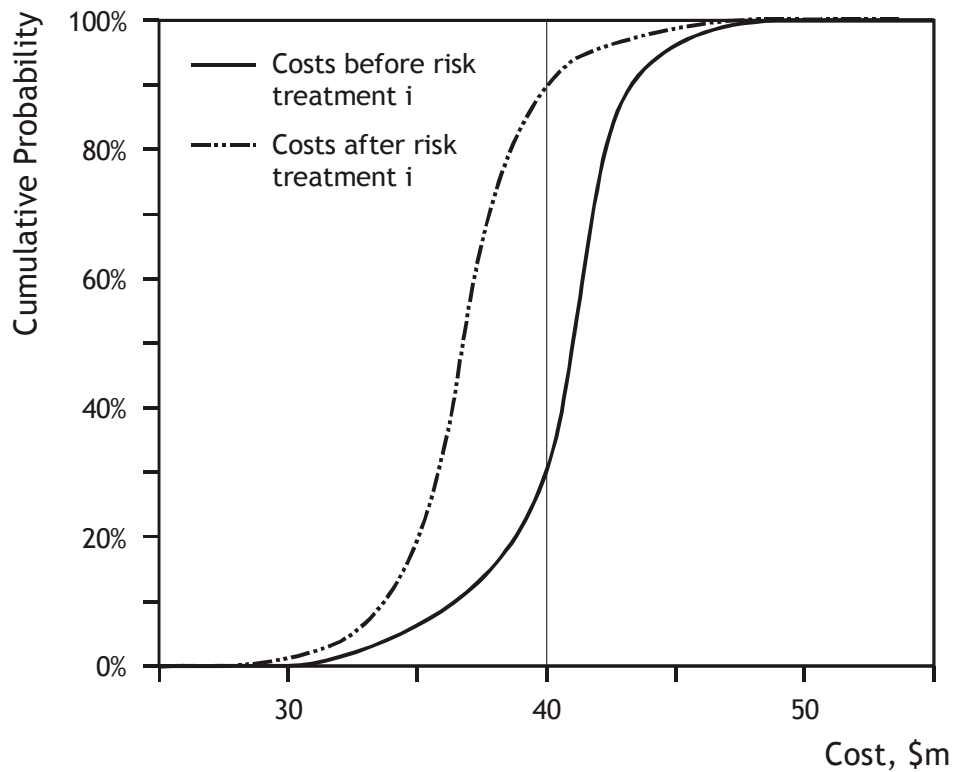
Figure 2. Cumulative probability distribution of project cost before and after risk treatment

A strength of quantitative modelling is that the variability of cost and schedule can be seen before and after risk treatment. In Figure 2 there is a 70% chance that project costs will exceed $40m before risk treatment, and a 10% chance that project costs will exceed $40m after application of risk treatment *i*. Also it can be seen that there is still a residual risk that the project cost will exceed $45m whether the risk is treated or not. Such logic is used to support the evaluation of risk treatments.

However two problems arise with the reduction of risk impacts to the time and cost implications for the project. Firstly this reduction precludes other ways of judging risk consequences. For example, a particular risk might result in the death of a worker. A risk decision maker might undertake a quantitative analysis, calculating the cost of the impact by summing the cost of the

temporary loss of labour, the recruitment cost of hiring a new worker and the rise in workplace insurance premiums. The risk decision maker would use this sum to determine the amount of resource to apply to the treatment of the risk. Another risk decision maker might consider that the worker's life has value beyond that calculated in the quantitative analysis, and either apply more resources to avoid this risk, or abandon the project altogether as too dangerous.

The second problem with quantitative analysis is that only impacts contained within the project are considered. This means that actions taken on the project that have impacts on things outside the project are not taken into account. A project that generates substantial negative publicity might be viewed as a failure by an organisation even though the project meets scope, time and cost objectives.

Kevin recognises the limitations of considering projects solely in terms of scope, time and cost objectives: he understands that that project objectives may not easily be reduced to these dimensions, and that projects can fail for reasons other than meeting specified project objectives.

Kevin used a number of scales to represent impact at his risk workshop, as discussed above. Although Kevin provided these scales intact to participants, there was the potential at his risk workshops to explore the interests served by risk impact assessment, and to subject the scales to debate and revision. Conceivably negative impacts on any of these scales could be converted into monetary measures through quantitative risk analysis for risk response planning. However the conversion of all impacts to monetary measures would obscure the conversion process. One would no longer routinely ask, "Whose interest is threatened by the impact of this risk?" This would restrict the terms of any debate at the risk workshop to the monetary 'value at risk'.

Kevin's impact scales have the potential to provide a rich interpretive framework for participants in his risk workshops, encouraging diverse interpretations and evaluations of risk impacts. His scales promote debate not only on what the risk impacts might be, but on how these should be judged. External stakeholders can contribute understandings of the implications of risk impacts for the sponsoring organisation. Rather than facilitating metric-driven risk communication, Kevin's scales are generative, presenting a system of criticisable value claims, promoting exploration of different perspectives and the incorporation of different interests.

Moreover risk response strategies may also be exposed to the scrutiny of a wide range of stakeholders. A given risk response strategy might be unacceptable or particularly beneficial to a given stakeholder or group of stakeholders for reasons other than its impact on project scope, time and cost objectives.

Kevin's impact scales form part of a practice that actively promotes communicative action. Not only does his approach respect project stakeholders by engaging them in the assessment of risk impacts and response strategies, its practice supports communicative action, actively enabling the authentic pursuit of shared understanding among participants. The communicative rationality that results avoids the problems found with the meta-measures of qualitative risk analysis, and the obscuring operations of quantitative risk analysis.

Discussion

In this study I have explored project risk management practices from a Habermasian critical studies perspective. Two versions of project risk management were studied: the practices prescribed in the PMBOK, and the very different practices of an experienced professional project manager. These versions were analysed within a critical framework, using Habermasian concepts such as the idea of different knowledge-constitutive interests, the colonisation of the lifeworld, communicative rationality and the ideal speech situation. These concepts proved fruitful in understanding the different aims, strengths, vulnerabilities and outcomes of the two different approaches to project risk management.

This discussion section looks at the practical implications of this study. The conceptual foundations of critical studies are used to guide the development of the discussion that follows.

Implications for practice

The approach I have used in this study could be termed an exploratory empirically-inspired theoretical analysis. As such my findings are not valid or generalisable in a normative sense. The epistemological subjectivism and dissenting posture towards the existing social order of critical studies gives rise to different quality criteria. The value of a critical study is found in how well it manages to "*reflect* critically on how the reality of the social world, including the construction of the self, is socially produced and, therefore, is open to transformation" (Alvesson & Willmott, 1992). A critical management study can be judged on its ability to engage with practitioners and share these critical reflections.

Adopting this as a quality measure prohibits me from simply concluding that the traditional project risk management approach is inferior to Kevin's mutually deliberative approach, and recommending that Kevin's approach should henceforth be preferred. Doing this would merely replace one set of abstract principles with another. This would require the adoption of an objectivist epistemological stance and would thereby neglect the critical task of breaking objectifications to recover alternatives.

An analysis of the PMBOK itself highlights the deleterious effects of such a conclusion. Project management is represented in the PMBOK as a series of processes, each with designated inputs, tools and techniques, and outputs. Ideas that don't fit this framework are rendered invisible. Hodgson and Cicmil (2004) see two specific dangers arising from the PMBOK framework: firstly, that ethical and political questions are removed from the agenda with this 'black-boxing' approach, and secondly, that the potential for reflexive and embodied rationality is driven out by the universal claims of the abstract principles presented.

These considerations lead me to present the findings regarding the PMBOK's project risk management and Kevin's mutually deliberative approach as alternative metaphors rather than as ideal types. Morgan (1980) looked at the use of metaphors in organisational theory. He suggested that:

> Different metaphors can constitute and capture the nature of organizational life in different ways, each generating powerful, distinctive, but essentially partial kinds of insight….new metaphors may be used to create new ways of viewing organizations which overcome the weaknesses and blindspots of traditional metaphors, offering supplementary or even contradictory approaches. (Morgan, 1980, p. 612)

I propose metaphors of Calculator, serving the technical interest, and Debater, serving the practical interest. Table 1 below summarises characteristics of the approaches indicated by these metaphors and the findings from the analyses above. These metaphors are intended as points of departure to stimulate "new (socially constituted) self-understandings" among practitioners and to "simultaneously expose the interests which produce and disseminate management knowledge which was taken to be authoritative and hence unchallangeable" (Johnson & Duberley, 2003, p. 1291).

Table 1

Metaphors for project risk management

	Project Risk Management Metaphor	
	Calculator	Debater
Goal	Technical control of nature	Shared understanding
Approach proves useful	When planned responses are required to protect project objectives from the impact of project risks	When project stakeholders must work together to comprehend and deal with project variability
Incorporation of stakeholder risk perspective	Documented input to risk management process	Effected by stakeholder participation in mutual deliberation process
Treatment of risk impacts	Reductive: impacts are converted to time or cost	Potentially generative: impacts are mapped to a range of scales
Quality assured	By statistical rigour in assessing likelihood and accuracy in estimating impacts	By communicative rationality in the mutual deliberation process
Source of bounds to rationality	Cognitive limitations of the human brain	Socially ad-hoc and structural communicative distortions
Primary output	A mathematical model accurately representing reality	A broadly shared understanding of risks, impacts and responses

The metaphors are presented in this manner is to provoke critical reflection. Looking first at the goal of the approach represented by each metaphor, the Calculator's technical control of nature differs strikingly from the Debater's pursuit of shared understanding. These goals are reflected in the primary output sought by each of the approaches: a mathematical model

accurately representing reality in the case of the Calculator, and a shared understanding of risks, impacts and responses in the case of the Debater.

The primary outputs of each approach give a clue to the ways in which the perspective of stakeholders is accommodated. For the Calculator, stakeholder risk perceptions and attitudes need to be measured and expressed numerically to be incorporated as an input to the mathematical risk model. The project manager is therefore faced with the challenge of validly and reliably measuring stakeholder risk perceptions and attitudes. Stakeholders play an ongoing role for the Debater throughout the risk management process, as partners in a process of mutual deliberation regarding the risks, their impact and how these ought to be viewed. The project manager must be concerned with authentic communication throughout this process of mutual deliberation. Turning to consider quality assurance, the Debater's mutual deliberation process requires the project manager to pursue conditions that lead to a situation of communicative rationality among the stakeholders. The Calculator calls for the project manager to pursue statistical rigour in assessing risk likelihood and accuracy in estimating impacts.

These observations point to the threats to the rationality of each approach. The Calculator is subject to Simon's bounded rationality (1957), and must therefore be vigilant in identifying risks, continually searching for and quantifying events that may have a material impact on the project's time, scope and cost objectives. The Debater is subject to Forester's socially ad-hoc and structural communicative distortions (1989), and must counter these effectively to pursue communicative rationality among the stakeholders. Should the Debater fail in this task, the claim to communicative rationality is lost and the process will fail in its goal of an authentic intersubjective understanding of the project's risks and their impacts.

For either approach, a central operation is the assessment of risk impacts. It is here that the treatment of the approaches as metaphors rather than ideal types yields benefits: We can validly ascribe specific concrete practices to each metaphor in a way we couldn't with ideal types due to concerns about adequacy of representation and generalisability. Metaphors illustrate rather than represent, and can be judged by how well they stimulate thought and discussion.

The Calculator turns impact assessments into time and cost consequences for the project. Considering impacts only in terms of these consequences means that negative non-financial effects on the stakeholders are not taken into account. This leads to a very real risk for the Calculator: The project may not satisfy stakeholders even though project time, scope and cost objectives are met. For the Debater, the multiple impact scales promote debate of what is important as well as how impacts should be judged. In doing this the project manager is returning a measure of the responsibility for the project to the project stakeholders, reversing part of the logic that led to the establishment of project management in the first place. This partial return of responsibility to project stakeholders is in line with recent regulatory moves placing internal control responsibilities on directors. It is ironic that the turn to project risk management following the need by corporate boards for greater internal control should result in a partial return of project responsibility to these boards from the very agents they put in place for this purpose.

The character of each risk management metaphor becomes apparent when they are placed side by side. Since the metaphors serve different knowledge-constitutive interests, they differ markedly. Each dimension of comparison represents a vivid point of difference. Bringing the different aims, strengths, vulnerabilities and outcomes of the metaphors to the fore promotes the agency

of project managers, enabling them to produce their own situated syntheses. Yet simple combination of the metaphors does not exhaust their generative potential. A practitioner who is inspired to conceive of an altogether different goal or a third means of quality assurance for project risk management while pondering these metaphors is truly advancing the emancipatory agenda of this study.

Conclusion

This study has shown how an exploratory empirically-inspired theoretical analysis can contribute to the transformative redefinition of management practices. Interviewing Kevin provided a description of a mode of practice almost archetypically distinct from professionally recommended practice when analysed in Habermasian terms. Comparing Kevin's approach with that detailed in the PMBOK yielded descriptions of practices serving different knowledge-constitutive interests, rendering analysis straightforward. These approaches were described using metaphors to achieve a transformative redefinition of project risk management without simply substituting a new objectification. Contrasting the different dimensions of the metaphors leaves the definition of project risk management open, returning agency to practitioners. This study demonstrates the powerful evaluative strengths of a Habermasian analysis.

Looking ahead, the study of project risk management would be enriched by poststructuralist analyses. Such studies would investigate the context surrounding project risk management practices, looking at the discourses promoting the adoption of project risk management. Poststructuralist analyses could also be applied to readings of the power/knowledge connection in project risk management interaction. A hint of what is possible can be found in Vaughan (1999) who studied 'fact-hardening' processes leading to space shuttle launch decisions at NASA and how these contributed to the Challenger space shuttle disaster.

Further potential exists for Habermasian critical studies to contribute to the study of project risk management. Forester (1992) demonstrates how Habermas's universal pragmatics can be used in the interpretation of close

readings of interaction. Such an approach could be used to support the analysis of the significantly expanded scope of an ethnographic study of project risk management. Forester (1989) also inspires in his choice of topic area: public planning professionals working in a political environment. Research stimulated by this work would look at project managers and others going about project risk management, using Habermasian analyses to examine the operation and effect of socially unnecessary communicative distortions. Finally my research question when commencing this study remains unexplored: the study of the clandestine ends to which project members put project risk management.

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