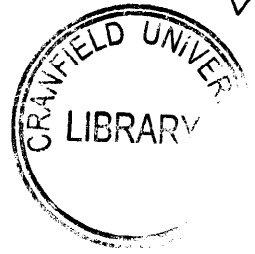




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**SWP 18/98 BUILDING GROUNDED THEORIES OF
MANAGERIAL BEHAVIOUR FROM
INTERVIEW DATA**

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BUILDING GROUNDED THEORIES OF MANAGERIAL BEHAVIOUR FROM INTERVIEW DATA

Abstract

Despite great potential, the grounded theory approach to building theories from empirical data has found little success in the study of managerial behaviour. This deficiency may be traced to contrasts between the stylistic legacy of grounded theory's origins in symbolic interactionism and the demands of causal managerial perspectives applied in interview-based qualitative research. This paper explores the mismatch and explains how it may be reconciled by employing a simplified grounded theory model and a multi-level 'critical realist' ontology. Practical guidelines are offered in the form of a step-by-step procedure.



INTRODUCTION

In the field of business and management, academics and practitioners attempt to learn from one another. On one hand, the rise of business schools and popular management theories reflects growing awareness of a need for managers to make sense of the contemporary world of organizations and to keep pace with the changing ideas and practices of managerial work. Managers try to learn from academics, absorbing and applying their theories and prescriptions. On the other hand, practitioner demand for knowledge is accompanied by an equivalent academic demand for empirical data. Research agendas in business schools are influenced by clear calls for theories of organization and management that may be applied as practically useful management tools. Pursuing such ideas, academics seek to learn from managers, processing their deeds, their words and the outcomes of their actions into normative benchmarks and generalizable blueprints for managerial performance and success.

Two themes arising from this mutuality of need may be traced in organizational literature. First, there is a persistent call from a significant minority of writers for more inductive, *theory-building* studies, using empirical data to build theories which are useful and relevant. Second, there is a shift towards theories of managerial behaviour, including those which take a *cognitive* perspective, which place at centre stage the active role of managers.

Theory-building

In the first of these two themes, some calls for more theory-building research come from organizational theorists who question the relevance of their own field. Daft and Lewin, for example, ponder the apparent practical uselessness of much organization theory, and ask whether the field of organization studies is not irrelevant. They report the lack of relationship in theories of organization between usefulness and validity, observing that 'the body of knowledge published in [organizational] academic journals has practically no audience in business or government' (Daft and Lewin, 1990: 1). They suggest that, if progress is to be made, the needs of practitioners must not be ignored.

Underlying this practical concern is a more fundamental methodological issue, where the dominance of the nomothetic, naturalistic, deductive, theory-testing research paradigm in management research is challenged on scientific grounds. Writers such as Mintzberg (1979), Eisenhardt (1989), Parkhe (1993), and Burrell (1996) argue that the pre-paradigmatic, evolving status of research into organizational processes makes it appropriate for researchers to put more effort into building new theories from empirical data. They point to the tendency for researchers to move too soon towards testing the statistical significance of relationships between conceptual variables in theoretically-based arguments.

Managerial cognition

In the second theme, the behavioural sciences have seen a shift 'of near-revolutionary proportions' (Ilgen and Klein, 1988: 328) towards the cognitive perspective. In theories of management, the cognitive orientation emphasizes the mediating role of the

manager between environmental stimulus and behavioural response. Central to the cognitive perspective is the proposition that people perceive and think about the social world differently than what would be expected based on stimulus information and principles of formal logic (Higgins and Bargh, 1987). The cognitive perspective is encapsulated by Ilgen and Klein's (1988) notion of the *stimulus-organism-response* (S-O-R) model, which casts individuals as processors of information. This perspective, which differs from the mechanistic, passive, behaviourist *stimulus-response* (S-R) model, 'affords cognitive processes a major role in the behavioural sequence' (Ilgen and Klein, 1988: 329).

Opportunities for theory-building within the field of managerial and organizational cognition may be construed from Spender and Eden's (1998) observations concerning the pre-adolescent status of the field. They report challenges to 'naive' assumptions concerning links between decision making choice, action and self-reported choice processes. Further, the extent to which the cognitive perspective may be or should be restricted to conscious thought processes is the subject of some debate. Spender and Eden (1998: 4) report 'a widespread appreciation that much of human action is determined by non-conscious predispositions and modes of choice'. Expressing a similar sentiment, Fineman stresses the centrality of emotions and feelings in the everyday experience of working in an organization. He argues that, already, 'more radical perspectives reconceptualize cognition as inseparable from emotion' (Fineman, 1996: 543). In this paper the broader meaning of cognition is taken, in which the mediating role of both the manager's conscious and non-conscious thought processes is acknowledged.

In common with the persistence of calls for theory-building research, the rise of the cognitive perspective is attributed, at least in part, to managerial concerns for useful theory. Tenbrunsel et. al. (1996: 313), for example, assert that the shift towards the cognitive perspective has arisen from the pressure to develop psychological theories which address the activities and interests of managers and which 'provide managers with more levers for change'.

Grounded theories of managerial cognition

Combining the two themes outlined above, it is reasonable to suppose that attempts at theory building within the cognitive perspective have the potential to produce useful, relevant theories. Further, in consequence, one might expect that theoretical advance on the subject of building theories of managerial cognition would be a central concern of management research methodologists. In one area - causal mapping - this is certainly the case. Many empirical studies of managerial and organizational cognition use causal mapping techniques to elicit strategic processes. Such techniques are normally coloured by two distinctive characteristics. First, they typically employ a particular a-priori cognitive theory (for example attribution theory, categorization theory, personal construct theory) as the epistemological basis for causal representation. Second, many causal mappers make claims to validity and reliability on the basis of following an established, structured method for collecting and mapping data, sometimes using proprietary mapping software (see Eden and Spender, 1998 for an exploration of the field of managerial and organizational cognition).

Outside the cognitive mapping school, for the novice qualitative management researcher seeking to build theories rather than apply them there is little dedicated methodological guidance and few exemplars of research conduct beyond the level of procedural detail. In qualitative management research, as much as in management research as a whole, important ontological and epistemological issues are often either artfully avoided, taken for granted or ignored. Undeniably, a good understanding of appropriate data elicitation and analysis techniques is essential. It is, however, just as important for a researcher to understand how the aims, assumptions and theoretical traditions of a particular topic or field may productively be matched with those of established methodological processes.

Of particular concern in this paper is that one of the most highly-developed and widely-cited theory-building approaches, known as *grounded theory*, has seen little productive discussion in management literature. Claims, often vaguely expressed, to have used the approach have been made by some organizational researchers, but there remain significant opportunities to progress understanding of how established grounded theory processes, which have proved productive in other fields, might be developed and applied to managerial behaviour research. This paper traces the reason for the lack of joint theoretical and methodological advance in this context to two sources, both linked to grounded theory's origins in symbolic interactionism.

- 1 **The form of the theory.** The substantive origins of grounded theory are in constructivist interpretations of symbolic interactionism in clinical sociology. Grounded theory's methods were developed to meet the needs of theoretical output in that field. Its earlier substantive publications exemplify the fine-grained description and sensitivity to over-simplification which is needed to express integrated sociological theory. The theoretical demands on management researchers are for models, causal theories and management 'tools' ultimately relating to notions of performance. The basic *form* of theories needed to satisfy this demand is different.
- 2 **The nature of the data.** Although plurality of data sources is emphasized in grounded theory research writings, approaches to data collection in symbolic interactionist studies have centred on participant observation. As a participant observer the researcher is required to record social actors' raw interpretation of their environment *as the latter interpretations are made*. Field-based managerial research often places central emphasis on interview data, where the researcher does not record managers' interpretation of events as they happen. The researcher is required to record managers' post-hoc interpretations of the managers' own initial interpretations which gave rise to their behaviour.

This paper argues that while some aspects of grounded theory-building methodology and method match well the needs of managerial cognition research, in other respects contrasts need to be resolved through theoretical discussion. A revised perspective is suggested which focuses on a narrowed subset of established grounded theory methods within an explicit multi-level ontology. The paper explains how such a change of perspective makes it possible for the original grounded theory procedures to be simplified and transformed into an effective procedure for building grounded theories of managerial cognition from interview data.

In the following sections the origins of grounded theory are outlined, and the progressive proceduralization of its processes over the years is discussed. Grounded theory methodology and methods are then examined in the context of managerial cognition, taking into account the assumptions of the latter perspective. Mismatches and complications inherent in importing the full-blown grounded theory approach are resolved by applying a simplified analytical framework within a critical realist perspective. Finally, a set of practical guidelines is offered for qualitative, theory-building researchers of managerial behaviour.

THE GROUNDED THEORY APPROACH

The approach to discovering theory from empirical data known as *grounded theory* has its origins in the pragmatist Chicago School tradition of symbolic interactionist sociology. The term 'grounded theory' is commonly associated with its founders Glaser and Strauss, who developed their ideas of integrated qualitative data analysis in a prevailing academic climate of sociological orthodoxy which, to some extent, they opposed. In particular, Glaser and Strauss felt a need to provide a counter-balance to the dominance of the 'doctrinaire' concern in sociology with the rigorous verification of logico-deductive theories, which had allowed the persistence of a perceived 'embarrassing gap between theory and empirical research' (Glaser and Strauss, 1967: vii). Grounded theories, in contrast, were derived directly from empirical data. They would therefore satisfy four essential requirements of useful theory: they would *fit* the real world; they would *work* across a range of contexts; they would be *relevant* to the people concerned; and they would be readily *modifiable* (Glaser and Strauss 1971: 176).

In their methodological treatise *The Discovery of Grounded Theory* Glaser and Strauss (1967) set out their approach to generating grounded sociological theory. The twin foundations of the approach are *theoretical sampling*, whereby the process of data collection is controlled by the emerging theory, together with the *constant comparison* method of joint data coding and analysis. Using the terminology of Glaser and Strauss the process may be summarized as follows. *Incidents* of phenomena in the data are *coded* into *categories*. By comparing each incident with previous incidents in the same category, the researcher develops theoretical *properties* of categories, and the *dimensions* of those properties. As the study progresses the focus changes from comparing incidents with one another to comparing incidents with properties of the category that resulted from initial comparisons of incidents. The theoretical sampling and constant comparison processes lead towards the *theoretical saturation* of a reduced set of categories within the boundaries of the emerging theory. *Memos* - records of ideas relating to categories - and the categories themselves, form the basis of the written theory. Explored in different field settings and broader contexts, *substantive theory* may be developed into more abstract *formal theory*. Although Glaser and Strauss state that the theories so generated may be presented 'either as a well-codified set of propositions or in a running theoretical discussion' (1967: 31), it is the latter form, characterized by richly descriptive interpretation, which dominates their own work.

The proceduralization of grounded theory

In setting out and illustrating the grounded theory approach in these terms, Glaser and Strauss emphasized that their 'principal aim' was 'to stimulate others to codify and publish their own methods for generating theory' (1967: 8). This idea relates to one of the recurring strands in grounded theory debate, namely the extent to which it is desirable or possible to pin down and formalize the approach as a general procedure. Glaser and Strauss were clearly aware of the dilemma of describing in the linear format of a practically-applicable research monograph what they knew to be a highly personal, iterative procedure. This awareness is evident in the book's style, which is, for the most part, self-consciously open and non-prescriptive, with repeated statements of the need for intangible qualities such as insight and 'theoretical sensitivity' (Glaser and Strauss 1967: 46). For Glaser and Strauss the latter essential element in a sociologist's armoury comes not the following of procedures but from a combination of the sociologist's innate ability to conceptualize and formulate theories, from his or her personality and temperament, and from knowledge of his or her area of research.

The non-linear nature of qualitative sociological research is frequently stressed by other writers on qualitative methods including, for example, Miles and Huberman (1994), and Bogdan and Taylor (1984). The latter assert the researcher-specific nature of qualitative research, observing that all researchers develop their own ways of analyzing qualitative data. Despite Glaser and Strauss's earlier acknowledgement of the need for 'open-mindedness', and their desire 'to stimulate rather than freeze thinking' (Glaser and Strauss, 1967: 9), the two men later became somewhat divided on the question of whether, and how, grounded theory processes could be formalized as a set of techniques. Their earlier joint publications were followed by individual contributions, each presenting developments of their own ideas. Glaser was less keen to see grounded theorists following an orthodoxy of approach, preferring to direct his attention to ways of enhancing researchers' latent creativity (see Glaser, 1978). Strauss, on the other hand, was more inclined towards producing prescribed procedures for the benefit of users of the grounded theory approach (see Strauss, 1987). Strauss and Corbin's (1990) book *Basics of Qualitative Research* took the prescription of grounded theory methods a stage further, arguing that following procedural detail is useful for learning qualitative analysis. Their concern was to 'spell out the procedures and techniques... in greatest detail' and in 'step-by-step fashion' (Strauss and Corbin, 1990: 8).

In accordance with this aim, Strauss and Corbin present their recommended approach in a boldly proceduralized fashion (even though they are careful to qualify their discussion of techniques with clear warnings about the difficulty in practice of formulating good grounded theory). Many examples of attention to procedural detail may be found in the book, including the sub-division of the coding process into three stages, labelled *open coding* (fragmenting data), *axial coding* (putting data back together in new ways using the paradigm model - see below) and *selective coding* (selecting the core category and relating it to other categories). Formal definitions are given for these and many other such terms. The book describes how such analytical devices as the *paradigm model* and the *conditional matrix* may be applied.

The *paradigm model* is at the core of Strauss and Corbin's method. It consists of a systematized cause-and-effect schema which the researcher uses to explicate relationships between categories and subcategories. It is presented as follows (Strauss and Corbin, 1990: 99):

(A) CAUSAL CONDITIONS → (B) PHENOMENON →
(C) CONTEXT → (D) INTERVENING CONDITIONS →
(E) ACTION/INTERACTION STRATEGIES →
(F) CONSEQUENCES.

To aid the identification of relationships between conditions, consequences, actions and interactions Strauss and Corbin further recommend the graphical tracing of *conditional paths* on a *conditional matrix*. The conditional matrix represents a set of *levels* drawn as eight concentric circles, each level 'corresponding to different aspects of the world' pertaining to a phenomenon (Strauss and Corbin, 1990: 161). Moving from the outer circle to the inner the levels are labelled as follows (Strauss and Corbin, 1990: 163):

(1) International (2) National (3) Community (4) Organizational and Institutional (5) Sub-Organizational and Sub-Institutional (6) Group, Individual, Collective (7) Interaction (8) Action

Grounded theory in management research

Strauss and Corbin's (1990) variant of grounded theory represents the state of the art in step-by-step grounded theory technique. It is packaged as a universal model for the analysis of qualitative data from all 'social science and professional' substantive disciplines (Strauss and Corbin, 1990: 7). It is openly based on Glaser and Strauss's (1967) original, less prescriptive approach to producing integrated interpretations of social worlds. It is, apparently, an attempt to present that original approach in a straightforward, proceduralized form but without losing any of its comprehensiveness and intellectual complexity. This uncompromised intent has resulted in a step-by-step 'method' which is difficult to follow in practice except in a loose, non-rigid, non-specifiable fashion which inevitably draws it back towards the original version. This difficulty is borne out by published grounded theory studies in the field of organization and management, which are characteristically vague about their interpretation of grounded theory methodology and method. It is supported by the author's experience with doctoral students who have abandoned the approach because of its bewildering complexity. Some organizational grounded theorists evidently consider that to claim to have used grounded theory (see for example Rothschild-Whitt, 1979) or 'the grounded theory approach of Glaser and Strauss' (see Kram and Isabella, 1985) is a sufficient, legitimate explanation both of their ontological and epistemological stance, as well as of the precise procedures for data analysis which they employed. There are exceptions to this vagueness. Gioia and Chittipeddi (1991), Gersick (1994), and Brown and Eisenhardt (1997), for example, explain in some detail how they adapted the grounded theory approach to their particular substantive needs, each developing a version of the grounded theory approach which differed substantially from the original, whilst retaining its distinctive qualitative characteristics. The work of these researchers supports the argument, developed in the next section, that the version of grounded

theory which is used in any particular application must take into account the implications of the theoretical aims, assumptions and data sources in that application.

In management research there is little evidence of the successful application of any precisely delineated, prescribed approach. Bryman (1988: 85) follows a description of the approach with the observation: 'In spite of the frequency with which Glaser and Strauss and the idea of grounded theory are cited in the literature, there are comparatively few instances of its application along the lines developed above'. Ultimately, qualitative researchers attracted by such guiding and legitimizing devices as the paradigm model and the conditional matrix cannot escape the undiminished need for less palpable qualities such as sensitivity, creativity, patience, perseverance, courage and luck.

It is possible that for qualitative researchers, operating outside the established norms of the scientific method, there is a seductive appeal in the availability of a formal, step-by-step procedure for generating theory from data. References to Strauss and Corbin's approach suggest that, for some, their step-by-step model holds a certain attraction (see for example Rieple and Vyakarnam, 1996). Such a procedure might hold the promise of limiting some of the dangers of trusting in a highly uncertain creative process to produce results. Further, the formalization of qualitative, theory-building approaches might also be seen as offering a legitimizing device with which to counter criticisms of lack of rigour of qualitative studies from researchers operating within the more established rules of positivism. Both these possibilities add weight to Strauss and Corbin's argument that spelling out qualitative procedures and techniques is useful, particularly for novice researchers. However, this overview of the development of the grounded theory approach has pointed to the possibility of shortcomings of Strauss and Corbin's step by step method. Its aim of providing a recipe to satisfy the needs of qualitative researchers from all social science disciplines whilst remaining true to the distinctive grounded epistemology of symbolic interactionism has resulted in a procedure that is, apparently, intellectually over-complicated. In order to use the grounded theory approach in a context of aims and assumptions which differ from those of symbolic interactionism it is necessary to consider the distinctive theoretical implications of that context. The next section will show how such a consideration might be useful, taking managerial cognition as the context. A model of grounded theory is developed to serve the specific needs of researchers seeking to build grounded theories of managerial cognition using interview data.

GROUNDING THEORY AND MANAGERIAL COGNITION

On the face of it, the aims and assumptions behind grounded theory's symbolic interactionist origins match the aims and assumptions of social cognition, which includes the narrower concerns of managerial and organizational cognition. The principal characteristic of symbolic interactionism is a concern for understanding social processes and interactions from the social actor's point of view. For symbolic interactionists 'a stimulus to act is depicted as undergoing a process of interpretation before a response (an act) is forthcoming' (Bryman, 1988: 54). In this important interpretivist respect it aligns with the broad aim of social cognition, to study how people make sense of other people and themselves (Fiske and Taylor, 1991). Beneath

the surface of this alignment, however, two issues need to be taken into account when importing the grounded theory approach.

The form of the theory

The first issue arises from the effect on the form of published theory of the central role of causality in theories of managerial cognition. The constructivist philosophical assumptions of symbolic interactionism exerted a powerful sway over the development of the grounded theory approach. This influence is amply evident in the form of Glaser and Strauss's research publications (see for example Glaser and Strauss 1964, 1965a, 1965b, 1971). Their concern is for particulars rather than abstractions, and for open systems of thought rather than closed absolutes. Their characteristic style is narration of carefully-constructed, data-driven discursive or propositional theories. The form of published symbolic interactionist grounded theories by other researchers is similarly characterized by richness and complexity (for more recent examples see the work of self-proclaimed symbolic interactionists Baszanger, 1997; Clarke, 1997; Fujimura, 1997; Konecki, 1997). The 'theory' is rarely summed up as an easily-digestible causal explanation, and is often expounded over many pages of text. Indeed, Bryman (1988: 85) questions whether much grounded theory, which concentrates on the generation of categories, is really theory at all.

The complexity of the symbolic interactionist view of the role of causality in theory is to be seen in Strauss and Corbin's paradigm model, where causal conditions are linked to action not through cognition but more indirectly via 'phenomenon', 'context', and 'intervening conditions', each of which may include elements of cognition. Further, the eight-layered conditional matrix is clearly designed to cover all the components of the paradigm model not only in the reactions of individual responses to stimulus information in organizations but also in the full kaleidoscopic range of sociological contexts. Because managerial cognition researchers focus on managerial concerns the demand is for theories in the form of assimilable causal models in a narrowed version of the conditional matrix. As Tenbrunsel et. al. (1996) observe, the purpose of these theories is to convey truths which, when learned by managers, will change those managers' behaviour in a prescribed direction. Their desired form derives from the simple model of stimulus - organism - response.

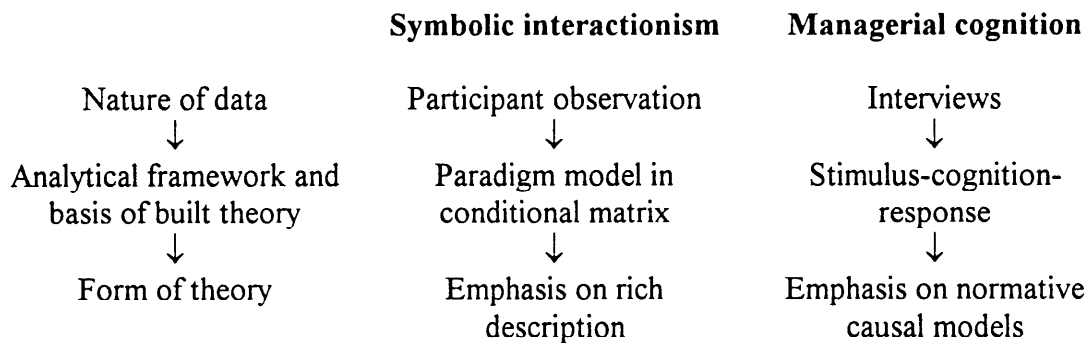
The nature of the data

The second issue arises when interview data are used as the basis for building causal theories. Symbolic interactionism rests on the premises that (1) action is taken on the basis of meaning, of how we define a situation and how we think others will view our actions, that (2) meaning comes from social interaction, and that (3) meanings are handled in and modified through an interpretive process (Blumer, 1969: 2). The job of the researcher is to catch the process of interpretation by which actors construct their actions. For this reason the 'pivotal strategy' (Rock, 1979: 178) of symbolic interactionism is participant observation, following social processes over time to capture actors' definitions of self, of situation, and of the interaction between the two that leads to action. A problem for grounded theorists who use interview data in managerial cognition studies is that their data are not based on observed events, but on informants' second-hand accounts of those events. The issue here is not whether

respondents' answers will be deliberately or unwittingly biased to be more 'logical' or 'socially desirable' (Eiser, 1980: 8). Such methodological concerns, although relevant and legitimate, are outside the scope of this paper. Here, the specific concern with interview data is that the 'reality' which the interviewer seeks to elicit is a causal S-O-R mechanism. The reality of that mechanism is a stage further away from the intermediate reality of the interviewer's words and two stages further away from the immediate reality of that which is observable by the interviewer.

A theoretical solution

The position may be summarized as follows:



Taking into account these issues, it is possible to develop an improved grounded theory framework to match the needs of managerial cognition research based on interview data might be developed, firstly by simplifying the Strauss and Corbin model, and secondly by aligning it more centrally with causal aims.

First, it may be made more accessible by shedding some of the complexities necessary for a single framework to embrace the study of interpreted behaviour of people in *all* social science disciplines and in *all* social contexts. The structured social context of organizations and the central focus on managerial decisions enables significant simplifications to the paradigm model and the conditional matrix. The paradigm model becomes (note that the possibility of causality in both directions is added):

- (A) ATTENTION TO STIMULI ↔
- (B) MANAGERIAL COGNITION ↔
- (C) ACTION/BEHAVIOUR

In the same way the conditional matrix may be simplified from eight concentric circles to four, labelled as follows:

- (1) External organizational context
- (2) Internal organizational context
- (3) Individual and collective managerial cognition
- (4) Action

Second, a multi-level ontology is needed which is able to accommodate the aim of developing causal theory while acknowledging the *lack* of absolute causal certainty which characterizes social processes. Interview-based causal-theory-building research needs to be anchored in a theory of reality which allows the specification and refinement of causal explanations which (1) exist in the form of mechanisms which may

not be consciously perceived by informants nor theoretically preconceived by researchers, which therefore may act independently of thought, and which are only accessible through the creative speculation by the researcher of plausible alternatives whose 'truth' is ultimately dependent on consensual validation by informants, (2) from data which do not necessarily explicitly link the elements of the paradigm model (for example when the stimuli are sometimes unperceived by the informant, let alone the underlying causal mechanism), and (3) from data which are not based on direct observation by the researcher.

A theory of reality which matches these requirements is Bhaskar's (1975) critical realist ontology. Bhaskar argues that reality exists in three overlapping domains: the *empirical* - experiences or observed events, the *actual* - events whether observed or not, and the *real* - the underlying tendencies or mechanisms which may in a given situation give rise to events or may lie dormant, being cancelled out by other forces. For managerial cognition research, adopting such a multi-level ontological perspective allows the assumption that contexts/stimuli, meanings/cognitive processes, and responses/behaviours are real, and that while some of their elements are revealed as observable events, some may be accessible only through the subjective accounts of managers and other organizational actors, and still others may only be uncovered through researcher speculation over apparent causal tendencies, demanding further enquiry and verification. From this perspective researcher interpretations are 'hypotheses, in the sense that they are potentially corrigible by further discoveries' (Outhwaite, 1987: 20). Bhaskar (1975) sums up this philosophy of science as follows:

Roughly the theory advanced here is that statements of laws are tendency statements. Tendencies may be possessed unexercised, exercised unrealized, and realized unperceived by men [sic]; they may also be transformed (Bhaskar, 1975:18).

The three overlapping domains may be represented as follows (Figure 1):

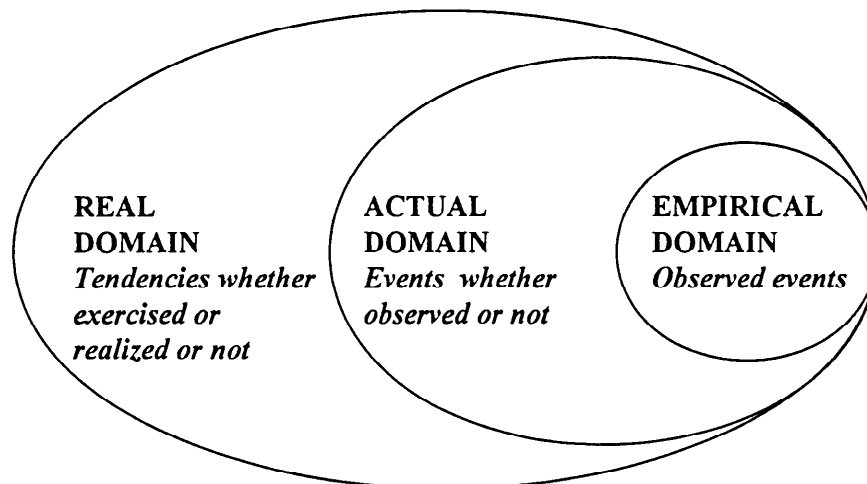


Figure 1: Three domains of reality in the critical realist ontology

Outhwaite provides a simple, familiar example of the three domains and the distinctions between them:

My watch has a mechanism in virtue of which it has the power to, as we say, tell the time. But for this to happen there are three main conditions. First, the mechanism must have its causal powers intact: It must not be, for example, 'broken'. Second, the mechanism must be activated: I must remember to keep my watch wound up and set to the correct time zone. And third, although the watch will, if these conditions are satisfied, 'tell the time' 24 hours a day whether or not I observe it, it will only tell *me* the time if I *observe* the *event* of the hands pointing to 11:15, an event produced by a latent structure or *mechanism* (Outhwaite, 1983: 322, emphasis in original).

In this example the *mechanism* is there, whether or not it is activated to produce the *event* of the watch indicating the time, whether or not this is *experienced*. This logic may be extended to the context of research into managerial cognition. The *mechanism* is the existence of external and internal forces or stimuli which, provided they or their effects are attended to, may lead to a purposeful response. Without such attention the mechanism lies dormant. With it, a process is enacted in the form of a series of *events*, whether or not these are *experienced* by the researcher. Tsoukas (1989) suggests that, through repeated speculation and enquiry, the researcher's job is to merge the real and the actual domains.

How might a researcher apply the combination of the simplified grounded theory model with the multi-level ontology? A practical application of the approach, presented as a series of analytical steps, is described in the following section.

PRACTICAL RECOMMENDATIONS

The application of grounded theory methods within the critical realist ontology described above is based on an approach developed during the course of a theory-building doctoral study (Partington, 1997). The basis of the study was a qualitative comparative analysis of approaches to implementing planned organizational change initiatives in different industries. The research findings are expressed as an integrated theoretical model and a series of propositions relating managerial behaviour to organizational characteristics via the psychological construct known as personal control¹. The core of the theory is that the behaviour of a manager seeking to implement change may be considered as an expression of the totality of the manager's possession or pursuit of personal control (on five dimensions) over the change at any time, and that the extent of personal control felt arises from the manager's attention to a few key characteristics of the organization and its sector.

Before describing the analytical approach the epistemological basis of the study should be emphasized. The approach to theoretical development was guided principally by

¹ *Personal control* is defined by Greenberger and Strasser (1986: 165) as 'the individual's beliefs, at a given point in time, in his or her ability to effect a change, in a desired direction, on the environment'.

Glaser and Strauss's (1967) ideas, but firmly in the critical realist ontology. Accordingly, although the output of the research was an S-O-R theory which had at its core a pre-existing (but previously undimensioned) theoretical construct, the underlying epistemology, which derived from the combination of grounded theory and critical realism, was that cognitive theory was the target, not the basis, of the study. This required a suspension of theoretical consolidation until late in the study, and a constant search for the 'best' (i.e. most consensually valid) explanatory link between environmental stimulus and managerial behaviour.

The steps described below represent the final version of an approach developed over the course of many hundreds of hours of analysis. This version does not attempt to account for the tortuous reality of the many blind alleys and wrong turnings which were taken.

- * The starting point for empirical work was (1) open-ended research questions concerning managerial behaviour and its links with the environment, and (2) a simple conceptual framework, selected to provide a rich setting for data analysis, based on the four elements of the simplified conditional matrix described in the previous section.
- * The unit of analysis of a case (an organizational change initiative) was carefully defined for the purpose of delimiting the boundaries of the case and specifying which informants to interview, whilst giving free rein to the theoretical sampling process, both within and between cases. To this end, interview transcripts were done as soon as possible after each interview.
- * Transcripts were reviewed and all instances of the four major conceptual categories of the analytical framework were coded in the transcript word processor file².
- * Each instance was attributed a sub-category which characterized its nature and which closely fitted the data. The categorization scheme was kept fluid, developed and modified until all relevant data from all sources in a case and in all previous cases were accounted for. Data sub-categories were developed as comprehensive and yet parsimonious expressions of each emerging concept, using the four criteria: (a) centrality; (b) frequent appearance in data; (c) relate easily to other categories; (d) clear implications for more general theory. (Glaser and Strauss, 1971)
- * Each category and sub-category was given an operational definition in the form of a specification for identifying further instances.
- * To aid the process of understanding the relationship between categories chronologies were developed for each project and key events shown on a time-scaled diagram.

² Use of a proprietary qualitative data analysis software package 'NUD.IST', was tried in the early stages of analysis. It was found to place unwanted intellectual constrictions on the analytical process and was abandoned in favour of the comparative freedom and flexibility offered by conventional word processing software.

- * Each instance was numbered and summarized in the form of a freehand entry in the appropriate category of the theoretical framework sketched on a large sheet of paper. Following the simplified paradigm model links were traced between instances in different categories. The inverses and opposites of sub-categories were considered, with each instance further coded (+) or (-) to indicate the positive or negative direction of its links with other sub-categories. Instances were developed as 'trios', each trio linking one or more element of stimulus with one or more elements of behaviour via one or more elements of cognition.
- * Memos were entered into the transcript as they occurred during the process of transcription and coding. Memos were developed supporting or refuting emerging propositions regarding connections or relationships between categories. Codes, including trio numbers, and memos were maintained within transcripts in a distinctive typeface to aid understanding and retrieval.
- * Using the word processor's capacity to search, retrieve and change character strings, sub-categories were grouped together to verify their usefulness and to establish properties and dimensions of each one. In the early stages there was a great deal of change to the coding structure and to the emerging concepts and themes. Inadequate sub-categories, properties and dimensions were discarded or combined. Instances were accumulated to the point of saturation, at which it became clear which future instances would be located in a sub-category.
- * Part of the iterative process involved the building of connections to existing theory. (Glaser and Strauss (1967: 46) make the point that grounded theories may contain both emergent theoretical elements and theoretical elements which already exist³.) Lists of literature references relating to emerging core categories and their links with other categories were maintained. Part way through the process literature reviews were undertaken for key emerging cognitive constructs in the search for theoretical explanation of behaviour in the context of the study. The criteria, which were ultimately best satisfied by the personal control theory, were simplicity, elegance, and above all 'consensual validity' (Gouldner, 1970). Holding in suspension the exact theoretical basis for representing cognition until as late as possible was an important aspect of the approach. The key to this suspension was the development of multiple theoretical properties and dimensions of sub-categories, and the resisting of the temptation to collapse the properties of each sub-category into a single 'extent' until the final stage of the study. Constant comparison of sub-categories, instances and trios within and between cases was used to stretch each emerging concept as far as possible in an effort to ensure the integration of concepts and to test theoretical links, whilst staying as close as possible to the data.

³ Glaser and Strauss also make the point that 'theoretical sensitivity is lost when the sociologist commits himself [sic] to one specific preconceived theory (e.g. formal organization) for he then becomes doctrinaire and can no longer "see around" either his pet theory or any other.' This advice, and even the example given, is a warning to management researchers who may be encouraged or inclined to see the world as either they or their informants would like it to be, rather than as it is.

An example of coded data and an illustration of key terms in the final data structure in relation to this data are given below.

<p>“A lot of these people that I’ve described that are on these manufacturing teams, and all my organization, and all the materials management organization, all the factory, all the engineering, all the staff have changed dramatically, because we’re not bound by union agreements, we’re not bound by payment systems, and what we have to do now (laughs) is attack that area [AKOC-TRADITIONAL FEELING-CO-OPERATION (-) MB-FORMAL (-) LINE OF LEAST RESISTANCE].”</p>	
CATEGORY	MB (managerial behaviour)
SUB-CATEGORY	MB-FORMAL (formal communication of plans)
DIMENSION	Predetermined sequence... Emergent sequence
TYPE	Easiest first
INSTANCE	(Above quote)
TRIO	[AKOC-TRADITIONAL PC-CO-OPERATION (-) MB-FORMAL (-)]
<p>Key organizational characteristic <i>Traditional self-image</i></p> <p>↓</p> <p>Personal control <i>Co-operation (-)</i></p> <p>↓</p> <p>Managerial behaviour <i>Formality (less)</i></p>	
PHENOMENON	Despite the crippling effect of union agreements such as LIFO and piece work, both on the change process and on the organization, they have put off tackling them until last.
IMPLICATIONS	The traditional characteristics of the organization diminish the manager’s expectation of co-operation. This results in a fatalistic approach and a sub-optimal management process.

CONCLUSION

This paper has provided an example of how, in theory and in practice, grounded theory methodology may be adapted to suit a specific theory-building research context. The aims, assumptions and procedures of grounded theory have been considered in the light of the aims and assumptions of managerial cognition research, specifically that which uses interview data. A framework for analysis has been developed which resolves contrasts between the two traditions and which emphasizes and takes advantage of those elements of grounded theory which are useful in the context. The result is a simplified model, illustrated by a series of steps, which may prove helpful to qualitative researchers who wish to build rather than apply theories. The recommendations in the steps are especially intended to guide researchers who are learning their craft and are attracted by the idea of a step-by-step procedure, but who do not feel comfortable with the full-blown non-context-specific Strauss and Corbin

technique. It is hoped that this example goes some way towards addressing one of the reasons why, as Turner (1981: 226) observes, published grounded theory studies tend to lack 'detailed information on exactly how qualitative data should be processed in order to develop grounded theory'. The grounded theory approach is not context-independent. It is not a convenient term which may be wielded as a sufficient explanation of a researcher's data processing approach and theoretical assumptions. It can never be a universally-applicable off-the-shelf package. If, however, a researcher is willing to address the particular implications of applying grounded theory in *this* study, with *these* assumptions, using *this* data, the study is more likely to reach a successful conclusion.

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