

TAKING ACCOUNT OF STRUCTURE:
RE-EVALUATING PRACTICE BASED PERSPECTIVES ON KNOWLEDGE VIA
CRITICAL REALISM

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Introduction

One of the most important and enduring theoretical debates with regards to understanding the nature of human behaviour concerns the relationship between structure and agency: the extent to which human behaviour is shaped and constrained (or not) by social structure. In such debates (as in all areas of social analysis and theorization), ontology matters (Archer 1995, Fleetwood 2005). This is because the ontological assumptions analysts make shape their epistemology, methodology, and the types of theories they develop. Thus the ontological assumptions people make affect their position in the agency/structure debate. This paper engages with these issues through using a critical realist ontology to suggest that practice-based perspectives on knowledge/knowing could develop richer accounts of the nature of learning and knowledge processes in organizations, through taking greater account of how the structural and cultural context within which action takes place, shapes how organizational actors behave and think. The specific way this will be achieved is through reinterpreting a detailed empirical case study that utilizes a practice-based perspective.

Critical Realism is a philosophical perspective whose popularity appears to be growing in the management and organization studies literature. This is witnessed by both a growing number of management papers either using or advocating critical realist perspectives (see for example, Ackroyd & Fleetwood 2000, Fleetwood, 2005, Mutch 2002, Whitley 2003), as well as a fierce debate on the relative merits of critical realist and social constructionist/post-structuralist perspectives (Contu & Willmott 2005, Fairclough 2005, Fleetwood 2005, Mutch 2005, Reed 2005a, Reed 2005b, Willmott 2005). This paper doesn't engage with this specific debate, except to make two brief points. Contu & Willmott (2005) attack Reed's arguments regarding the 'turn' towards critical realism on a number of fronts, one of which is the evidence of such a turn having occurred. In supporting this argument they suggest that a lack of reference to critical realism in Clegg et al's Handbook of Organization Studies (published in 1996) weakens Reed's case. But, how reference to a decade old book challenges Reed's argument for a 'relatively recent'

turn is unclear. In fact, in the Lacanian sense that all statements contain an element of their opposite, their argument could be turned on its head and used to support Reed's argument through indicating how even only a decade ago, there were few references to critical realism, which contrasts to its increasingly high profile usage now.

The second point to make regarding this debate, which provides one of the key reasons why it is not seriously engaged with here, is the lack of detailed engagement with, or use of the work of Margaret Archer (1995, 2000, 2003). For example, in their challenge to Reed (2005a) and the implicit tendency towards structural determinism they detect in his analysis, Contu & Willmott (2005) dismiss Archer's body of work in one sentence thus, *'Critical Realism and critical realism have comparatively little to say about agency, even in contributions that aspire to fill this void (e.g. Archer 2000, 2003)'* (p. 1654).

In contrast to this withering dismissal of Archer's work, her 1995 book spends an enormous amount of time elaborating on the concept of 'agency' and is fastidiously consistent at every turn in avoiding the reification of 'structure' through taking care to always make clear that structures are human creations having no existence independent of people. Despite the focus on Bhaskar's work in much analysis of critical realism, Archer's 1995 book arguably represents the most complete and coherent methodology for the application of critical realist philosophy. Thus, along with Mutch (2005), this paper suggests Archer's work, and in particular the articulation of her morphogenetic approach is worthy of detailed reading, engagement and application. This paper thus doesn't explicitly engage with these debates as it is concerned with applying (a version of) critical realist philosophy to the understanding of organizational knowledge processes, rather than providing a detailed explanation and justification of critical realism in general.

As outlined, the paper meets this objective through reinterpreting an empirically based paper on organizational learning and knowledge processes which utilizes a practice-based epistemology. Gherardi & Nicolini's (2002) analysis of the negotiation of safety matters on an Italian building site is chosen for this purpose. This is not done to single their paper out for special criticism. Instead it is because it represents an archetype of empirical

applications of practice based epistemologies in the knowledge and learning literature. Archer (1995, p. 10) suggests that all 'micro-level' interactions between people are enmeshed in and shaped by broader socio-cultural relations. The key objective of this paper is to suggest that management and organization writers on organizational knowledge and learning processes utilizing practice based epistemologies could benefit from taking greater account of such insights in analyzing organizational action/practices, and that Archer's Morphogenetic approach specifically provides one way in which this could be done.

The paper is organized into three main sections and is structured thus. Firstly, it outlines the practice based epistemology on knowledge and learning processes, and suggests that this perspective is typically allied with a (usually implicit) social constructivist ontology. The second section then provides a very brief overview of critical realism and a brief description of Archer's Morphogenetic approach. The third and final section then uses Archer's Morphogenetic Approach to reinterpret Gherardi & Nicolini's analysis to greater account of the socio-cultural context within which action takes place and to consider how such structural factors shape such action.

The Practice-Based Epistemology in the Learning and Knowledge Management Literature

The practice-based perspective on knowledge and learning represent ones of the two dominant epistemologies within the knowledge management literature (Cook & Brown 1999, Empson 2001), and is a perspective which has been adopted in a wide range of published work (for example, Bechky 2003, Brown & Duguid 1991, Gherardi 2000, Gherardi & Nicolini 2002, Orlikowski 2002). As this paper is concerned with developing a critique of how the ontological assumptions of this perspective typically leads to the neglect of structural factors in analyzing organizational learning and knowledge processes it is necessary to consider how this perspective conceptualizes knowledge.

Most fundamentally, rather than conceptualizing knowledge as a cognitive entity which can be disembodied from both people and the context in which it is used, the practice based epistemology conceptualizes knowledge as being embedded within and inseparable from the day-to-day practices that people carry out in the conduct of their work. Thus from this perspective it is more appropriate to talk of how people demonstrate and sustain their *knowing* through engaging in work activities than to talk of *knowledge* as being something that people possess. Thus, Orlikowski (2002, p. 249) talks of, '*organizational knowing as emerging from the ongoing and situated actions of organizational members as they engage the world.*' Within this perspective, knowing and activity are mutually constitutive and inseparable, and any analytical separation between 'knowing' (as an intellectual activity) and 'doing' (as a physical activity) represents a false dichotomy. For example, Gherardi (2000, p. 218) talks about how '*practice connects 'knowing' with 'doing.'*'

The remainder of this section gives a brief overview of the case study article that is being reinterpreted here. However, before doing this it is necessary to explain why this particular study has been chosen for examination. It is fundamentally important to say that the reason for focussing on Gherardi & Nicolini's paper is NOT to single it out for particular, special criticism. In fact it represents one of the most interesting, and insightful papers on how what people know is (re)produced via the day to day activities and practices they are involved in, with a specific focus on the discursive practices undertaken by participants from three interacting communities of practice. Gherardi & Nicolini's (2002) paper is here used as an illustrative archetype of the empirically based application of the practice based epistemology of knowledge. Other studies which fall into this category include Bechky (2003), Blackler et al (2000), Brown & Duguid (1991), DeFillippi & Arthur (1998), Gomez et al (2003), Hutchins 1993, Lave & Wenger (1991), Orlikowski (2002), and Orr (1990). While these studies apply the practice based epistemology in quite different work contexts (including film production, navigation on U.S. naval ships, the maintenance of photocopier machines and dispersed software development to name just four) they all have a distinguishing characteristic in common, which allows for an archetype to be used to illustrate the wider body of work.

Fundamentally they are all qualitatively rich, micro level studies which have a detailed focus on the activities (both physical and discursive), and interactions of a typically small number of actors who are involved in a particular organizational context or site.

The physical location that was the focus of Gherardi & Nicolini's attention was a medium sized building cooperative on a building site in Modena, northern Italy. The particular activities they analyzed were related to the negotiation of safety on the site among three of the main groups involved in this process: site foremen, engineers and main contractors. Gherardi & Nicolini explicitly utilize a practice based perspective on knowing and learning, for example, saying at the start of their paper that, '*learning a practice involves active participation in a set of activities*', (p. 421). Further, they utilize the 'communities of practice' concept to suggest that the members of each of the three groups examined firstly, identified with the groups they represented, secondly, had particular, contrasting perspectives on safety issues, and that thirdly, the perspectives on safety they developed were closely related to the character of their occupations, the knowledge they possessed and the day-to-day activities they undertook.

The analytical focus of their paper is very much on micro level issues, being centrally concerned with firstly, describing the character of the perspective on safety adopted by the community participants examined and secondly on how issues of safety were negotiated via the discursive interactions between the actors which took place on this issue. In examining these discursive interactions they conclude that a fragile, provisional agreement on issues of safety was negotiated, but that due to their differing perspectives on safety a total consensus was never reached, with there simultaneously being both an element of consensus and dissensus, or as the authors say, '*harmonies and dissonance*' (p. 420). Their primary conclusion, best summed up in their own words it that, '*...in a constellation of interconnected practices, discourse among communities is a specific practice intended to achieve not so much understanding and/or the production of collective action as learning mediated by comparison among the perspectives of all the participants in a practice*' (p. 423).

While the central focus of their paper is on micro-level factors, some acknowledgement is made of the role played by wider socio-cultural factors in shaping the perspectives on safety adopted by the actors examined. For example they touch on how the professional training of the engineers shaped the type of knowledge they possessed, and how this in turn affected their conceptualization of safety. However the focus of Gherardi & Nicolini's analysis on micro-level factors means that these issues are described in passing as contextual details, rather than topics which were analyzed in detail.

While writers utilizing, or advocating a practice based perspective on knowledge often devote significant amounts of space to epistemological concerns (see for example Blackler 1995, Gherardi 2000, Nicolini et al 2003), issues of ontology are devoted much less space and are frequently left implicit. However, the extent to which micro-level processes are focussed on suggests that they represent the 'ontological bedrock' (Reed 2000, p. 49) on which such analyses are founded. Such a focus arguably indicates a proximity to what Fairclough (2005) associates with a social constructionist ontology, where there is an emphasis on process and 'organizing' rather than 'organization', and a perspective Reed suggests attaches an,

'overwhelming importance to the localised interactional contexts and discursive, representational and technical practices through which 'organisation' is instantiated as a temporary ordering or patterning of the continuous flow of social life', (2000, p. 52).

Thus in the literature on organizational knowledge and learning processes, the practice based epistemology is typically allied to a social constructivist ontology. Such a focus arguably indicates a one-level process dominated ontology where 'structure' and 'agency' are collapsed into local and micro level processes (Reed 2000). It is this focus on micro-level processes, and the lack of detailed attention paid to more structural factors in the socio-economic context which is here argued to be the typical weakness of the empirical studies which utilize a practice based epistemology. The paper now shifts focus to outline critical realism's quite different and distinctive, stratified ontology, which takes greater account of structural factors in understanding action than is typical in empirical based applications of the practiced based perspective on knowledge.

Critical Realism and Archer's Morphogenetic Approach

As outlined, in advocating the adoption of a critical realist ontology for the analysis of organizational learning and knowledge processes, this paper focuses narrowly and specifically on Margaret Archer's Morphogenetic approach (1995). Before doing this it is worthwhile providing a brief overview of critical realism's central tenets. However, this will be done with deliberate brevity, not only because constraints of space prevent a full elaboration of critical realism's key philosophical arguments, but also because this has already been done by others in a number of recent articles (see Fairclough 2005, Fleetwood 2005, Reed 2005a).

Critical Realism's Foundational Ontology

Critical realism has arguably made a significant contribution to the structure/agency debate through the development and elaboration of its stratified ontology (Reed 2005a). Archer (1995) suggests that prior to the development of critical realism there were three ontological frameworks which conceptualized the relationship between structure and agency differently. In the first two frameworks one element is privileged over the other, with the subsidiary element becoming an epiphenomenon. For example, Reed (2005a), Fleetwood (2005) and Fairclough (2005) all suggest that the strong social constructivist ontologies that have become quite influential in management and organization studies, privilege 'agency', and deny the existence and causal efficacy of structures independent of people's conceptualization of them. The third perspective on the agency/structure question, most visible in Giddens' structuration theory, is to collapse structure and agency together, arguing that they are inseparable. In contrast, critical realism has developed an alternative perspective. This ontology makes a strong distinction between agency and structure, which are conceptualized as distinct strata of society. In this respect Archer argues,

'[b]ecause the social world is made up, inter alia, of 'structures' and of 'agents' and because these belong to different strata, there is no question of reducing one to the other or of eliding the two and there is every reason for exploring the interplay between them.' (1995, p. 62).

For critical realists, entities are real if they have causal efficacy, but a distinction is made between different types or modes of reality, with social structures being conceptualized as 'socially real' (Fleetwood 2005). For critical realist, social structure is used as, '*a portmanteau term to refer to configurations of causal mechanisms, rules, resources, relations, powers, positions and practices*', (Fleetwood 2005, p. 201). A fundamental property of social structures, like all socially real entities, is that they have no materiality, but they never the less have causal efficacy.

While structure and agency are analytically distinguished, they are intimately intertwined. Thus structure and agency evolve through a process of what Archer refers to as '*double morphogenesis*', whereby agents, in the process of reshaping the socio-cultural structures they act within, simultaneously reshape themselves. Further, while structures condition action, they never determine it, as human agents have causal powers of their own, and thus have the ability to transform structures.

For critical realists, the only way to avoid the reification of social structure is by continuously acknowledging its activity-dependence. However, this is not incompatible with saying that the agency of actors is restricted not to creating structures, but working with (and possible transforming) the pre-existing structures which surround them. These structures are social creations, but they are the creation of other, previous actors. Simply put, and paraphrasing Marx, people act, but not in circumstances of their own choosing. But, to be totally clear, and to avoid charges of over-privileging structure, this means human action is conditioned, but not determined by pre-existing social structures. For example, as a lecturer in a UK university, the role, 'lecturer' and the norms of behaviour and language which come with it, pre-existed me, and condition how I act. But they don't

mechanically determine how I behave, because as an actor with causal efficacy, I have the ability to ignore, challenge, or revolutionize the role and its associated norms.

The consequences, and arguable advantage of critical realism's stratified ontology which neither privileges agency over structure or vice versa, or collapses the two together, is that it allows for an analytical focus on the inter-relationship between them. This represents the central analytical concern of critical realism, summed up by Fairclough in the following quotation,

'[t]he concern in research is with the relationship and tension between pre-constructed social structures, practices, identities, orders of discourse, organizations on the one hand, and processes, actions, events on the other. People with their capacities for agency are seen as socially produced, contingent and subject to change, yet real, and possessing real causal powers which, in their tension with the causal powers of social structures and practices, are a focus for analysis', (2005, p. 923).

The remainder of this section outlines how Archer develops these into a specific analytical methodology, which she terms the Morphogenetic Approach.

Archer's Morphogenetic Approach

The primary reason for utilizing Archer's Morphogenetic approach to reinterpret Gherardi & Nicolini's paper is that it provides a specific methodology for the application of critical realist philosophy to the social world. She articulates the objective of her book, *Realist Social Theory: The Morphogenetic Approach* (1995), thus,

'methodology, broadly conceived of as an explanatory programme, is the necessary link between social ontology and practical theory ... this book is intended to supply, an explanatory methodology which is indeed pivotal, called the morphogenetic approach', (p. 5).

This quotation also makes explicit one of the key themes in her book: the close relationship that exists between ontology, methodology and what she refers to as

'practical social theory'. Fundamentally, our ontological assumptions about the nature of the world will shape both the methodologies we adopt to investigate social phenomenon (for example shaping both what constitutes an appropriate research subject and also the specific practical methods to be used in any investigation) and the types of social theory that we develop (Fleetwood 2005). Archer's objective in her 1995 book is thus deliberately to extrapolate from a critical realist ontology to develop a practically applicable methodology. This is articulated by Archer as follows,

'the morphogenetic/morphostatic framework is put forward as the practical complement of social realism because it supplies a genuine method of conceptualizing how the interplay between structure and agency can actually be analyzed over space and time', (1995, p. 15)

Thus for those wishing to utilize a critical realist ontology in the analysis of social phenomenon it represents a potentially powerful and valuable tool.

In the space available here it is impossible to give a full and extensively detailed account of Archer's Morphogenetic Approach, or to outline the theoretical and philosophical arguments she makes use of to justify and develop it, a task which takes Archer almost 350 pages to do herself. Thus what is presented here can only be a simple sketch of the basic elements of her framework, without discussing the underpinning theory and philosophy which justify it.

Archer's morphogenetic approach is conceptualized as a cycle consisting of three basis phases: structural conditioning, social interaction, and social elaboration (see Figure 1). The model is also underpinned by two basis propositions (Archer 1995, p. 15-16). These are, firstly, that structure necessarily pre-dates the action leading to its transformation (structural conditioning comes before social interaction), and secondly that structural elaboration necessarily post-dates the actions that give rise to it (social elaboration comes after social interaction). Thus for Archer, whatever the topic under investigation, the three phase morphogenetic cycle can be utilized to analyze the relationship between structure and agency in the context considered.

Insert figure 1 about here – figure 6 from p. 157 (Archer 1995)

In this model, while the middle phase of socio-cultural interaction is the one which may, superficially appear to be where human agency has its greatest role, this is not the case, as human agency is implicated in and embedded within all phases of the cycle. The structural conditioning phase incorporates the critical realist assumption, outlined previously, that people act in already pre-defined circumstances. However, the structures which represent this pre-defined context are the result of human agency, being (re)produced by people at a time prior to the particular subjects under investigation. The social elaboration phase of the model, which flows out of the socio-cultural interactions in phase two can have one of two characteristics: social elaboration/morphogenesis (where people and structures are transformed); and structural reproduction/morphostasis (where people and structures are largely reproduced).

What should be apparent from this elaboration of Archer's morphogenetic cycle is the key role of temporality. Fundamentally, the relationship between agency and structure can only be understood as a relationship that evolves over time, with what happens in particular time periods having causal effects on subsequent events. What has happened in the past shape the conditions of possibility in the present. Finally, as a consequence of both taking account of temporality and assuming the social context/conditions in which people operate is pre-defined, one of the features of Archer's approach is that a greater account is taken of history than is perhaps typical in management and organization studies (Mutch 2005). Integrating temporality into the analysis of the structure/agency relationship involves taking account not only of the immediate social context, but also the wider socio-historical context out of which the immediate social context has evolved.

Structure/Agency Relations in Phases One and Two of the Morphogenetic Cycle

The remainder of this section concludes by looking explicitly at what Archer, borrowing from Bhaskar calls the 'mediating concepts' necessary to understand how agency and

structure link, touch and interact is social situations. In doing this it is worth stating that the focus here is only on phases one and two of Archer's morphogenetic cycle, looking at the structural conditions which constrain the action of the actors on the building site that Gherardi & Nicolini examine, as well as the degree of agency they have to behave.

For Archer, 'emergent properties' refers to elements which have causal efficacy, with there being three different type of element with emergent properties: people, (social) structures, and culture. These elements are irreducible to each other, have autonomy and are relatively enduring. For example, people, as reflexive actors have emergent properties, as they possess the power and ability to shape the world around them (within the constraints provided by pre-existing structures). In analyzing social structure, Archer differentiates between two types of emergent properties in talking about structural emergent properties (SEPs) and cultural emergent properties (CEPs). SEPs and CEPs have emergent properties as they are autonomous from and independent of any particular actor, and also because they have effects on actors. SEPs are defined as internal and necessary relations between material resources, while CEPs are defined as logical relations between components of the culture system (theories, beliefs, values) that exist independently of anyone who knows them. Thus the body of work produced by management academics can be defined as a CEP as its concepts/theories exist independently of any particular individual knowing them, or even knowing of them, but has causal efficacy as it constrains actors, representing the body of ideas, concepts and theories through which new concepts etc, have to be built from, and expressed via. But, because of the emergent powers of people such influences only ever condition and constrain, and never determine how people act,

'no conditional influence works as a hydraulic pressure, but is subject to reflexive (if not imperfect) evaluation by agents who weigh it against their other concerns, due to their own emergent properties of self-consciousness and self-monitoring', (Archer 1995, p. 184).

In relation to the negotiation of safety on the Italian building site examined by Gherardi & Nicolini, an important SEP represents the roles of engineer, main contractor and site

foreman which have evolved over time, which pre-exist the particular individuals who embodied these roles when the research was conducted, and which have a number of norms and expectation attached which shape how the people who occupy them should act. Important CEPs in this context represent the body of ideas on safety which also pre-exist the specific individuals researched (such as the body of knowledge drawn on by the engineer), and which shapes how they think and act on safety matters. The power of the agents in this context represents the ability of the particular individuals who occupy these roles, to act autonomously within these constraints, for example either complying with the norms of the roles and drawing on recognized bodies of knowledge to legitimize their action, or challenging, undermining and revolutionizing the role, and drawing on, or developing ideas which have little previous legitimacy in the domain of building site safety. These issues will be returned to, and elaborated on in the remainder of the paper.

While Archer identifies a number of different SEP's, constraints of space prevent a discussion of them all. Instead, the focus here is on 'roles' as SEP's, as this is arguably the most important SEP of immediate relevance to the negotiation of safety regulations at the building site examined by Gherardi & Nicolini. In the following section, where a detailed reinterpretation of Gherardi & Nicolini's paper is conducted, the central way in which the structure/agency interaction is examined is in the relationship between the structural constraints imposed on actors by the SEPs and CEPs of the three roles examined (engineer, site foreman and main contractor), and the emergent powers of the particular actors who occupies those roles. Before doing this it is useful to briefly elaborate on the relationship examined here, and to also outline the general ways in which 'roles' mediate and shape the context in which people act. Roles are SEPs for a number of reasons, but perhaps most importantly because they pre-exist the people who occupy them (Archer 1995, p. 186-7). Further, all particular roles have inter-relationships with other roles (doctor/patient, lecturer/student,...) and also have relationships with material resources such as organizations and equipment. The occupation of such roles by particular people constrain and shape them in a number of ways (Archer 1995, p. 201-218).

1. Involuntaristic Placement

People occupying initial roles find themselves in circumstances they have no control over (such as the web of relations between roles and material resources just outlined). Thus on the Italian building site examined, the people occupying any of the three roles examined (initially) find themselves in role relationships that are not of their choosing (but which may be open to change, or transformation)

2. Vested Interests

Because of involuntaristic placement, people occupying particular roles become endowed with particular types of vested interest. These interests predispose (but don't determine) that the people occupying such roles act in certain ways.

3. Opportunity Costs

The acquisition of vested interest acquired via the occupation of a particular role does not in any way determine that they MUST follow these interests. However, there are opportunity costs involved in not doing so. For example, Archer (1995, p. 204), drawing on an example by Porpora (1989) suggests that a vested interest possessed by any capitalist is profit maximization. While an individual capitalist is not compelled to pursue such an interest, neglecting to do so will incur some opportunity costs (perhaps going out of business).

4. Degrees of Interpretative Freedom

The roles that people occupy shape how they act not only by endowing them with vested interests and associated opportunity costs for not pursuing them. Equally, the roles people occupy shape how they act through influencing the way people interpret and evaluate the options available to them and the rewards and penalties for pursuing them. Thus people's evaluations of the options available to them are shaped by norms, expectations and values which originate in the cultural context which people inhabit.

5. Directional Guidance

How people act depends on whether SEPs and CEPs are compatible or contradictory. Whether they are, or not, what Archer refers to as 'second order emergent properties', provide provides further directional guidance to people, encouraging and rewarding certain types of action and punishing and discouraging certain other types of action. Archer suggests that the relations between SEPs and CEPs provide actors with

‘situational logics’, which predispose them towards certain course of action (1995, p. 216)

Re interpreting Gherardi & Nicolini

A full and proper application of Archer’s morphogenetic approach to the social situation examined by Gherardi & Nicolini would require taking a long historical perspective and wide ranging account of how the Italian building industry had evolved to the way it was when they found it when they undertook their research. For example, relevant issues which would have contributed to such an analysis would have included such diverse topics as: how the political economy of Italy had shaped the character of Italy’s building industry (for example shaping the degree to which and ways in which safety regulations are monitored, the general structure of the industry, ...); the range and type of institutions which have interests in safety issues in Italy’s building sector (for example, are there national or regional regulatory bodies responsible for ensuring compliance with safety regulations; what professional institutions (if any) regulate the knowledge developed by engineers during their formal training); and the typical character of the people who fill the three roles examined (for example considering how the education system, and socio-cultural factors more broadly affect this).

For example in relation to this final topic, an issue not explored by Gherardi & Nicolini, is gender. It is likely that on the building site examined by Gherardi and Nicolini, as is the case on British building sites, most of the people filling all three roles would be men. For example in the UK, between 2002/03, 98.1% of the people undertaking modern apprenticeships in the construction industry were male, and in the same time period, 85% of the people who enrolled on engineering and technology degree courses in the UK were also male (EOC 2005, p. 5 & 7). Such gender-biased occupational outcomes are the product of complex socio-historical processes which shape what it is to be male and female, and the types of work which are most ‘suitable’ for men and women. The relevance of such statistics here is that the male domination of the three roles examined is

a relevant structural factor which will for example have some impact on firstly, the type of person who typically fills the role (i.e. men rather than women), secondly the behavioural norms of people occupying them, thirdly the culture of building sites more generally, and finally, perhaps even impacting on the way safety issues are discussed.

However, constraints of space make the examination of all such factors impossible. Thus, as outlined previously, the introduction and development of structural factors to the analysis of the negotiation of safety and the analysis of the relations between structure and agency is done via focussing narrowly on the role/person relationship, i.e. between the structural conditions produced by the three roles examined, and the agency of the specific actors who occupy them to act in ways of their own choosing.

In Gherardi and Nicolini's analysis, while the central focus of analysis was on the micro-processes of communication through which the engineers, site foremen and main contractors developed a fragile but common understanding of safety issues, the faint echoes of broader structural factors are acknowledged. This was visible when they identified how the professional training of engineers shapes their perspectives on safety, and also how economic rationales dominate the main contractor's perspective. However, such information largely had the role of background contextual information, which wasn't accorded any significant in their analysis. What is suggested here is that it is via giving such factors greater explanatory weight that a fuller account can be taken of how structural factors play an important role in the negotiation of safety. This is done via building on such insights to consider how the structural conditioning imposed on the actors who occupied these roles may have influenced both how they acted, and consequently, on how safety issues were negotiated.

Role Inter-Relationships

As outlined previously, Archer suggested roles have a fundamentally relational quality: they typically exist in relation to other roles. Such was the case with the engineers, site foremen and main contractors examined by Gherardi & Nicolini. Thus they highlighted

how the different rationalities they possessed with regard to safety issues (relational in the case of the site foreman, technical in the case of the engineer and economic in the case of the main contractor) produced conflict between them on safety issues (Gherardi & Nicolini 2002, p. 426). This conflict was one of the most important and consistent themes discussed in the paper. Thus, to some extent, in identifying this conflict and discussing how it shaped negotiations on safety, there is an overlap with an analysis utilizing Archer's Morphogenetic approach. The main difference, as will be illustrated in the remains of the paper, is the emphasis in the morphogenetic approach on making use of structural factors to understand such conflict.

Role/Agency and the Engineer

The best way to discuss structural factors relating to the role of engineer is via an extended quotation from the article.

'[a]lthough they declared that they had learnt safety not at university but on-site, their professional knowledge enjoyed a social legitimacy – and therefore an authority and authoritativeness – that the site foremen's knowledge did not. The former was abstract knowledge and it bestowed qualities like generalizability, codifiability or transferability; the latter was practical knowledge, and it was contingent, situated, implicit, and did not confer social authoritativeness' (Gherardi & Nicolini 2002, p. 426).

This suggests that in terms of SEPs that the knowledge and status of the engineer role is embedded in an institutional context which includes the university system, via which the engineer acquires his (her?) qualifications and probably also a professional institutional framework whereby the legitimacy of the engineering profession and the knowledge used by engineers is sustained and advanced. In terms of CEPs a key source of knowledge and ideas from which the engineer can draw is the formal abstract knowledge acquired via a university education, a body of knowledge and ideas which site foremen and main contractors are much less likely to possess or be able to utilize. Further, in terms of role

inter-relationships the quotation also suggests the knowledge, status and authority of the engineer is typically more highly regarded than that of the site foreman.

This suggests that in Archer's terms, these structural characteristics of the engineer's role imbues those who occupy it with a vested interest in sustaining this status differential, due to the advantages it may provide engineers in their interactions with site foremen and main contractors. Further, while the character of the role does not force them to act in this way (for example engineers, despite their training may choose to base their arguments in the relational logic of the site foreman, rather than drawing on their formal knowledge), engineers not acting to sustain such vested interests face opportunity costs for not doing so (for example, potentially losing the superior status the role imbues engineers with). Thus, while these structural factors condition how the engineers act, their power as reflexive actors with agency means they are not constrained to automatically act in such ways.

Role/Agency and the Site Foreman

The structural characteristics of the site foreman role can be defined by contrasting them with those of the engineer, and are also illustrated by the extended quotation used immediately above. Thus, the site foreman role, and the more typically context specific, and tacit knowledge they possess has lower social status and authority than the knowledge possessed by engineers. Further, unlike the engineer the site foreman role is not embedded in an institutional system which includes universities and professional bodies. Whether the site foremen require, or typically possess any formal qualifications to undertake their role is unclear from the article. However, even if some form of formal training and education is required, it is likely to be in the form of a non-professional, vocational qualification which has lower social status than the university qualifications of the engineers. Thus, in terms of CEPs, site foremen are less likely than engineers to have access to and be able to utilize formal codified knowledge to legitimate their position. Instead as illustrated by the above quotation, the knowledge of the engineers is much

more likely to be embedded in their day-to-day work experience. Thus, for example, Gherardi and Nicolini illustrate this by showing how their situational or relational perspective on safety was typically articulated via recounting previous episodes of good or bad practice.

Arguably, in Archer's terms, this imbues those occupying this role with a vested interest to continually attempt to legitimate the validity of their knowledge in the face of the engineers' superior status knowledge. Again, such structural conditioning does not compel any site foreman to act thus, as their agency allows them to determine how they act. Thus, some site foremen may act in a number of alternative ways, including attempting to transform the nature, norms and status of their role. For example, they could attempt to improve their status via acquiring the same qualifications as engineers, via taking a degree at a night class. However, Archer's analysis is clear, there will be consequences, or opportunity costs, whatever course of action they take, which flow from the status of the role as it was when they began occupying it.

Role/Agency and the Main Contractor

The final and perhaps most intriguing role is that of main contractor. However, few details on their role, the type of knowledge they possess or utilize, or the status of the role relative to site foremen and engineers is given, so a large amount of speculation is involved. What is clear from the paper is that the main contractor role has the primary managerial and economic responsibilities to ensure that the building work they supervise is completed on time, and within budget. Thus, Gherardi & Nicolini show how their perspective on safety is shaped by an economic rationale: doing things safely, BUT within specified financial budgets. In terms of vested interests and opportunity costs their position is close the example of capitalists discussed by Archer, who drew on Porpora (1989) mentioned earlier. Thus, the structural characteristics of this role are such that those occupying it have a vested interest in attempting to ensure that safety issues are dealt with within relevant financial budgets. As always, the individuals who occupy such roles are not compelled to act thus, and have the agency to act otherwise, however, due

the structural characteristics of the role, there will be opportunity costs for not doing so. If they don't get the appropriate balance between safety and economic factors the opportunity costs they may suffer are of having their ability to do their job questioned, which may impact on them financially or in career terms. In more extreme situations, an inadequate regard for financial/economic considerations may have more serious opportunity costs of involving a contractor losing their job, or the company they work for going out of business. Thus structural factors related to the character of the role do impinge on and affect the behaviour of anyone filling the main contractor role.

However, it is difficult to talk about concrete structural factors shaping the role, as few specific details are given. The intriguing and possibly most important aspect to this role is that it is made clear in the article that main contractors are, '*a relatively new figure in the Italian SME building sector* (Gherardi & Nicolini 2002, p. 426). This insight raises a number of questions, most fundamentally, why did this role emerge at this point in time? Answering this question would help provide information on the SEPs and CEPs related to the role, which would in turn provide help give a clearer indication of the vested interests, and opportunity costs associated with this role. Without more detailed information such questions can only be answered by speculation. In conclusion, taking account of and explaining the recent emergence of a role such as this is one of the ways that Archer's morphogenetic approach helps the structural context in which action takes place be fully accounted for in explaining the action under examination

Discourse Analysis and Critical Realism

While this paper has criticized the typically narrow focus on micro-processes, interpersonal interaction and communication of empirically based studies which utilize a practice-based epistemology on micro-processes, this does not mean that an analysis of discourse is incompatible with critical realism (Fairclough 2005, Mutch, Reed 2005a). However, the analysis of discourse requires to take account of the structural and cultural context within which discourses exist, are drawn upon and developed. Thus while Gherardi & Nicolini (2002, p. 228-9) talked of how people position themselves in

relation to discourse, through both choosing which discourses to draw upon and understanding others as having a relationship to different discourses, more account could have been taken of structural and cultural factors. For example, the discourse of technical rationality utilized by the engineers, which was based significantly on the formal knowledge acquired via their university education, is a discourse that the site foremen and main contractors were less able to draw on as a consequence of their lack of formal university training. Thus, socio-cultural factors help explain which discourses are likely to be available to those occupying which roles.

Actor Agency and Role Constraint

To conclude this section it is useful to finish by re-emphasizing the general point, repeated made in the paper, and in Archer's elaboration of the Morphogenetic approach, that while the socio-cultural contexts (including roles) in which people act, while conditioning how they act, never determine it. People always have adequate levels of agency to pursue the course of action of their own choosing. What critical realism, and Archer specifically suggest however is that structural factors will result in opportunity costs being experienced if vested interests are not pursued. However, actors as free agents have the ability to pursue such courses.

This can be illustrated through discussing the issue of gender in general, and through illustrating the discussion with a relevant personal anecdote. It was suggested earlier that all three roles examined by Gherardi & Nicolini were in all likelihood male dominated roles, and that as a consequence, norms and expectations of people (men) occupying them, may be gendered. For example, there are likely to be expectations on these men that they should adopt masculine values, behaviours and speech. However, while there may be strong normative pressure on any man occupying such a role to comply with such norms, this pressure in no way determines how they behave. Thus, any man occupying such a role has the autonomy and agency to challenge such norms, for example through dressing or talking in particular ways. In a previous career, the author of this paper worked as an engineer, and experienced someone doing just this. The engineering site he

worked at was male dominated and did have place strong normative pressure on men to behave and talk in particular ways. However, one of the men who worked there decided to make it public that he was a transvestite, who wanted gender reassignment surgery. This action was supported formally by his employers and became most visibly manifest when 'he' began coming to work dressed in women's clothes.

Archer's Morphogenetic approach specifically, and critical realism more generally is sensitive to such factors and doesn't even suggest that people's agency is ever structurally determined. However, it is suggested that when people ignore the vested interests they possess via the structural context, that opportunity costs will be experienced. In the case of the male engineer becoming a transvestite the opportunity costs 'he' experienced was total ostracism from his friends and colleagues.

Conclusion

The core objective of the paper has been to show how a critical realist ontology, and specifically Archer's Morphogenetic approach can enrich the analyses of writers who utilize a practice-based epistemology in the analysis of organizational knowledge and learning processes through taking full account of the structural and cultural context within which action/practice is located. Thus, rather than critical realism being used to challenge and undermine practice-based analyses of organizational knowledge and learning processes, it is suggested that critical realism can be used in tandem with practice based epistemologies, so long as a critical realist rather than social constructionist ontology is utilized. Such an ontology gives equal explanatory weight to structure and agency in the analysis of social interaction and behaviour, and has an analytical focus on the structure/agency relationship.

The paper has illustrated this through reinterpreting Gherardi & Nicolini's analysis of safety negotiations on an Italian building site. Specifically, the structure/agency inter-relationship was examined through focussing on the role/person relationship of the three

roles examined by Gherardi & Nicolini. Archer dislikes the micro/macro distinction as it suggests that there is a micro level of social interaction separate from macro level social factors. For Archer, all social relations examined, however small scale the focus, are enmeshed in a web of wider socio-cultural relations which condition how people act. The paper illustrated this in relation to the building site context examined through considering how the roles of engineer, site foreman and main contract, through a process of historical evolution involving other actors, had some characteristics which predated the specific people who occupied them on the building site examined by Gherardi & Nicolini, and which conditioned how these people acted.

While acknowledging the fierce debate between critical realist and post-structuralists, the paper has deliberately avoided directly engaging itself in it. However, to conclude the paper aspects of the debate will be touched on to suggest ways in which the critical realist 'turn' could most usefully develop. The work of Fleetwood (2005), Reed (2005a) and Fairclough (2005) has played a positive role in articulating a critical realist ontology and advocating its use in the domain of management and organization studies as a way of taking account of structure, while still being sensitive to issues of agency. A further useful way to illustrate the utility of critical realism would be through papers which actively utilize a critical realist philosophy to analyze empirical data. One of the objectives of this paper has been to show how Archer's morphogenetic approach is a potentially powerful and appropriate tool for this task.

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Figure 1: Archers Basic morphogenetic cycle