Penrose, critical realism and the evolution of business knowledge: a methodological reappraisal

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Abstract

This article examines the challenge of modifying orthodox 'case study' approaches to the growth of firms and inter-organizational networks in the light of recent work on the evolution of business knowledge. We suggest that a modified Penrosian framework, combined with a qualified application of critical realist practices, could contribute to more coherent and insightful theorizing in this area. We begin with a critique of Edith Penrose's legacy, including her efforts to initiate a historically informed tradition of social scientific research on the growth of the firm. We go on to consider the explanatory potential of critical realism, when adopted as a methodological adjunct to neo-Penrosian theorizing. Our main proposition is illustrated through a superfactual reinterpretation of certain aspects of the historical case study of the Rover Company (1896-1982) conducted by Richard Whipp and Peter Clark (1986).

Key words*: critical realism; Edith Penrose; retroduction; Rover; superfactual.*

Introduction

One of the primary assumptions of the theory of the growth of firms is that 'history matters'; growth is essentially an evolutionary process and based on the cumulative growth of collective knowledge, in the context of a purposive firm. (Penrose 1995 [1959], xiii)

The central challenge addressed in this article is that of modifying orthodox business 'case study' approaches to the growth of organizations, with their associated temporal and spatial conventions, in order to address new conceptual and methodological insights on the evolution of business knowledge. We have in mind the positions advocated in Lee's (1990a, 1990b) articles on corporate behaviour in theory and history, various contributions to the construction of a 'theory of business history'(Lazonick 1991; Corley 1993), and Gourvish's (1995) defence of the empirical approach. We reflect on some methodological implications of these efforts to integrate emerging social scientific theorizing on the growth of the firm with the empirical tradition in business history. The complex relationship between historical and social scientific traditions has been explored by Clark and Rowlinson (2004) in their claims about the 'historic turn' in organization studies. In this article, we reinvoke this long-standing tension between nomothetic and idiographic traditions in relation to research on the growth process. Our critical reappraisal draws on Edith Penrose's seminal (1959) study, The Theory of the Growth of the Firm, and its associated case research (Penrose 1960). We draw selectively on the Penrosian legacy and take a broadly sympathetic position on the potential relevance of critical realism (Clark 2000), especially in the nuanced revisions of Sayer (2000) and in Archer's account of morphogenesis (1995, 2000).[1] In each case, we argue that social theoretical debate must be complemented by more comprehensive programmes of empirical study in order to progress this methodological agenda (Blundel 2007). To this end, we review the historical case study of Rover 1896-1982, conducted by Richard Whipp[2] and Peter Clark (1986). In the course of our discussion, we consider the explanatory potentials of neo-Penrosian and critical realist approaches through reflections on aspects of the Rover study. These include the scope for counterfactual and superfactual argument (Clark et al. 2007) within an analytically structured narrative. In our concluding remarks, we comment more broadly on the implications for future research in this field.

The Penrosian Legacy: Beyond 'Models and Histories'?

Problems for strategic analysis arising from the Penrosian legacy were raised by Clark (2000) and addressed by Blundel (2002a, 2002b). Each of us has situated that legacy within attention to the historical dimension, especially in the suggestions from critical realism. In this article, we locate Penrosian learning in its co-evolutionary context and give heavy weighting to the specificities of regional location and to national cultural repertoires. From our perspective, the evolution of business knowledge in America or Italy, for example, cannot be usefully elevated into timeless time (Castells 1996, 1997a, 1997b) or into virtual space (Harvey 1990, 2001).
We begin with a critical review of Penrose's methodology, including the unusual relationship between her theorizing on the growth of the firm and the historical case study that provided much of the initial inspiration (Kay 1999). The argument will be that, notwithstanding Penrose's background in neoclassical economics, her lasting contribution has been to initiate a historically informed tradition of social scientific research on the growth of the firm. Penrose recognized that the constraining effects of a firm's environment were variable, in part because of the different ways that managers perceived 'their' environment. We note the ways in which Penrose's eclectic, multidisciplinary methodology has been applied in order to pursue this challenge. The subjectivist modification, inspired by Boulding (1956), shifted the balance in Penrose's theorizing decisively towards the idiographic; this was interpreted by the neoclassicists as subverting the requirement for parsimony and disciplinary purity (Kor and Mahoney 2000). More recent empirical studies of the growth process have become increasingly complex, their analytical scope having been broadened far beyond the relatively well-defined 'administrative boundaries' identified in Penrose's original formulation (Kay 1997; Best 2001). These spatial and temporal extensions have been dictated by developments in the research agenda, as interest has increased in firms engaged in inter-organizational networks (Wilson and Popp 2002), and as organizational researchers have probed the competitive dynamics of firms originating in different competitive contexts (Clark 2000). Even so, the underlying tension between 'models'and 'histories'remains in place, as reflected in intermittent, yet persistent, debates in the literature; debate continues over the extent to which nomothetic and idiographic approaches are capable of

informing these more complex research questions.

The idiographic-nomothetic debate continues to exercise the minds of social scientists, historians and reflective practitioners seeking to enhance their understanding of the growth of firms and the evolution of business knowledge. Recent efforts to broaden the scope and depth of the analysis include the application of multilevel and co-evolutionary analysis to various types of historical evidence. Multilevel and co-evolutionary analyses have attracted considerable attention in the organizational and business management literature, as reflected in special issues of the Journal of Managment Studies (2003), Organization Science (1999), Organization Studies (2001) and Strategic Management Journal (2000). Some researchers have produced substantial insights by applying co-evolutionary analytical techniques to detailed historical evidence, a notable example being Candace Jones's study of the growth of two distinct strategic groups in the early American film industry (Jones 2001). However, the co-evolutionary studies published to date have sometimes appeared stronger in their aspiration to span levels of analysis than in empirical realization. The implication is that the pursuit of tidy 'models' has taken precedence over the inherent messiness of the 'histories'. These methodological limitations are evident in Huygens et al.'s (2001) intensive study of the co-evolution of firm capabilities and industry-level competition in the music industry. Firm and industry levels of analysis are combined in the proposition that:

co-evolution of firm capabilities and industry competition manifests itself in a reciprocal process between the emergence of new organizational forms at firm level and new business models at industry level. (Huygens et al. 2001, 981; emphasis added)

The research was based around an historical study of the music industry, which yielded a classification of the competitive regimes existing in the period 1877-1990. There was also a multiple case study of six firms during a subsequent competitive regime, covering the period 1990-1997. This research approach is problematic in terms of its stated aim of conducting a multilevel, co-evolutionary analysis. The study presents the industry and firm levels of analysis in two separate periods. In addition, in the absence of retroductive abstraction, the influence of mechanisms operating at levels other than those of the industry and the firm are excluded (Huygens et al. 2001). In conclusion, we suggest that that there is a strong case for revisiting Penrosian eclecticism, albeit in a modified form, in order to counter the inappropriate abstractions and reversion towards 'models' that is associated with some of the recent multilevel and co-evolutionary theorizing (Blundel and Clark 2004).

Critical Realism and Retroduction

In this section, we consider the explanatory potential of critical realism, as an adjunct to the neo-Penrosian approach outlined above. For its proponents, the critical realist perspective offers the prospect of a more sophisticated spatial and temporal language that can be incorporated into the often chronically ahistorical frameworks adopted in organization theory, strategy and industrial economics. Business and management historians might reasonably contest the requirement for a methodology informed by critical realism, and in particular the assertion that its ontological position provided additional legitimacy for the well-established task of distinguishing structures, causal mechanisms and observed effects across time. Although there may be a degree of common ground between critical realists and mainstream historians, in defending the pursuit of real causal mechanisms against the relativizing critique of countermodernist historiographers (Evans 2000 [1997]; Sayer 2000), the critical realist approach to temporality represents a challenge to conventional depictions of historical sequence:

The idea of a cause depends rather obviously on the concept of sequential time. Something that causes something else generally comes before it in time, not after; thus the causes of the French Revolution of 1789 are to be found in the years 1788 and before, not 1790 and after. (Evans 2000 [1997], 140)

Critical realism, while acknowledging this argument, draws attention to persistent structures and associated causal powers. In this respect, at least part of the 'cause' of an event in the historical record at t1 may be derived from the retroduction of events recorded at t2, t3, etc. The realist analytical technique of retroduction involves a type of scientific generalization that is concerned with the isolation of fundamental structures whose powers can be said to act 'transfactually'(i.e. continuing to exist, even though their operations may not be manifested at the level of events or observations).3 In the research area under discussion in this article, retroductive inference would involve repeated movement between the description of particular empirical cases and abstract analysis of the growth process as a concrete phenomenon, with the aim of reconstructing the basic conditions (i.e. the structures, causal powers and mechanisms) that made it possible (Sayer 2000). As a consequence, retroduction requires a distinctive methodology in order to achieve its purposes (Easton 2000). The implication is that critical realist methodology encourages a more robust and analytically powerful conceptualization of context than that displayed in most of the published co-evolutionary studies. The critical realist's pursuit of structures and mechanisms can be criticized on the pragmatic grounds that it adds unnecessary detail and complexity, which are avoided in a more circumscribed analyses (i.e. model/theory is sacrificed in favour of history/narrative). Against this, realists would assert that retroductive analysis imposes a strong corrective on wayward story-telling. Retroduction demands that the contexts that theorists choose to bring into play are, like those of the historian, far from arbitrary (Evans 2000 [1997]). These issues are illustrated and expanded upon below, as we reconsider the Rover Company case study (Whipp and Clark 1986), in the light of recent developments in the academic literature, and also of the final collapse of the company in the early part of 2005.

Revisiting the Rover Company Case Study

Introduction

This section introduces the theorizing and methodology of the research on the Rover Company, undertaken by Peter Clark and Richard Whipp during the early 1980s (Clark and Whipp 1984; Whipp and Clark 1986). The rationale for the Rover study was to challenge prevailing approaches to the study of organizational innovation. In 1956, the year of founding of the *Administrative Science Quarterly*, the issue for the emergent field of administrative science and its claims about the opportunity to do organizational design introduced the break from history

(Clark 2000). Therefore, one intention was to mark off the historians' craft and its humanities-laden vision of the cloak of competence. Although historians claimed the present was loaded with the past (Braudel 1969), this view was deeply qualified by the leading expert on time in sociology in a series of debates (Gurvitch 1964). Our suggested resolution was the comparative analytically structured narrative (Clark 2000), which is summarized below with the unpacking of the temporalities of space and place. A form of historic (re)turn to organizational and management studies came later (Clark and Rowlinson 2004). Today, our preference is to develop a specialized variant on the counterfactual, in order to explain what cannot become (Clark 2000), and thereby to act as a check on the more casual and unreflective (ab)use of counterfactual argument. In the current ESRC Evolution of Business Knowledge (EBK) project, we have termed these phenomena 'superfactuals'(Clark et al. 2007). Superfactual histories differ fundamentally from the 'pick and mix' varieties that characterize orthodox business school approaches to the history of organizing. Furthermore, we argue that the application of superfactuals to analytically structured narratives, and the associated retroductive analysis, provides confirmation of recent revelations (re-revelations?) that much of the published literature on organizational change does not deliver (Sorge and van Witteloostuijn 2004).

Methodological Reflections on the Rover Study

The Rover Company study contained strong anticipations of neocritical realist analysis in the manner proposed by Sayer (2000). Between 1982 and 1985, Clark and Whipp had care of the Rover archives from Solihull and access to other documentary sources. They also conducted more than 60 interviews, made site visits and met with architects and the trade unions. The late Bill Abernathy (Harvard) was their adviser. Their comparative, analytically structured narrative covered the period 1896-1982 in two major steps: from 1896 to 1968/74 (mainly Clark) and then from 1968 to 1982 (mainly Whipp). They sought to construct the situation as understood at the time by the actors involved in the sector during particular periods (as Gregory 1982). Moreover, the analytic approach of 'firm-in-sector' was deployed to co-explore the interaction of emergent corporate capacities and contextual unfolding. The dimension of consumer sales in different national contexts requires that their framework located the British sector in the international 'competition between contexts'for this period (Clark 1987, 2000, 2003; Storper and Salais 1997). Elements in the comparative analytically structured narrative included a fusion of strategic time reckoning and the structural activation of repertoires from Clark (1978, 1985) with Le Roy Ladurie's (1979) structure-event-structure and Gregory's (1982) neo-Giddensian analytical narrative of the shifting English woollen industry in the 18th century. This was, therefore, a sympathetic interpretation of structuration theory (Giddens 1979, 1981, 1984). There was strong attention to prior configurations, collective experiences and emergent forms. Contingency and indeterminacy were assumed. The research was consciously longitudinal with episodic emergent processes (as Ladurie). Corporate, group and individual actors were examined within their own imaginations of strategic choice and within the analysts' imaginings of finite zones of manoeuvre. Periodization, turning points and discontinuities were highlighted, in order to reconstruct the tendencies to reproduction and discontinuity, and an effort was made to locate and assess path-dependent phenomena. The hope was to avoid being teleological and to achieve a satisfactory reflexivity. This core analytic framework was deeply informed by Abernathy's oeuvre on the American automotive industry. Initially, Abernathy and Utterback (1978) sought to develop a sector life cycle model from longitudinal empirical data sets. Seemingly, they succeeded. Their iconic and aesthetically seductive model depicted two separated curves starting high on the left of the graph with the founding of the sector, and then moving remorselessly downward towards the 1960s and maturity. The logic for strategy was simple. See where you are on the curve. If the firm is in the state of maturity then the only recourse is to large-scale production of a 'world car'. Abernathy (1978) related the model to the massive data archives at Ford and also a fine collection of specialist theses from Harvard-MIT. Testing destroyed the model because the 1960s revealed a significant upward move in the level of innovation in the car. The innovation arose from massive developments in every facet of the car: textiles, engine performance, electricals, aerodynamics and so on. There were also shifts in the process through which the car was manufactured. Abernathy (1978) understood very clearly the relationship between car and process design in the abstract and its implementation onto the existing facilities. His key analytic unit was the 'productive unit', consisting of a specific design of the car, its process of production, the whole work organization plus the associated logistics. This facet is virtually unmentioned in the study of the British car industry, with the exception of Whipp and Clark (1986), who analyse Rover as a shifting portfolio of productive units. In 1980-1981 Abernathy and colleagues demonstrated massive differences in the costs of a car between Ford and Japanese cars off-loaded onto the western seaboard of the USA. Clearly, massive shifts were underway. Then, in a series of articles with Kim Clark (e.g. Abernathy and Clark 1985), a new framework for analysing different levels of innovation ferment was proposed. With this framework came the observation that innovations can be entrenching of existing knowledge or can be altering. Additionally, in collaboration with Clark and Kantrow, Abernathy sought to reveal a key relationship between the national context and its corporations (Abernathy et al. 1983). Thus, in the course of a long decade, Abernathy shifted from the ahistorical linearity of the sector life cycle model to a tentatively historicized account of the USA. This emphasized the specific inertias surrounding the car industry, yet also highlighted pathways forward. The neo-Penrosian dimension in the study arises most clearly in relation to the attempts of Rover's board and management to push back the limits to managerial expertise (Penrose 1959), through devising a corporate repertoire of practices that addressed the contextual dynamics of the consumer market.

Rover 1968-1974: Counterfactual Variety or Strategic Fantasy?

Current reflections upon the demise of MG Rover often lead back to earlier turning points and possible counterfactuals. For example, Sir Geoffrey Owen suggests that if the nationalized British Leyland had taken other directions in the years 1968-1974, there might still be a British-owned car industry. Similar counterfactual notions are implicated in Holweg and Oliver (2005), but not in Church (1994). So, to what extent, if at all, are these strategic possibilities of a counterfactual variety? Or might we regard them as examples of strategic fantasies? We explore this and illustrate some of the potentials of critical realism through reflections on the Rover Company study, which spanned the years 1896-1982. We focus in particular on the period 1956-68 and situate that period within some of the structures and mechanisms operating more than 50 years earlier. We also highlight the emergent features in both the European context and also within the agency and Penrosian capabilities of the Rover Company until 1968. These are examined in the sections that follow.

Between 1956 and 1968 the European consumer market for executive and quality automobiles expanded. This specific market segment more than quadrupled and rapidly developed into a major segment during the following decades. In the new selection environment, the prime beneficiaries and leading edge included Mercedes, BMW, Saab and Volvo. Their focused capacities in robust innovation-design and medium volume customization were enabled to bloom. In contrast, Rover saloons, although much admired in Totteridge, did not inspire European consumers. Rover's annual volumes increased only slightly in relative terms. Rover executives did anticipate a shift in European consumption patterns, yet underestimated the competitive capacities of German and Swedish contexts for the Penrosian learning of their domestic firms. By 1968 they had few illusions about the future market situation for saloons 'slow built' in Solihull. They were much more optimistic about the four-wheel drive (4WD), also built in Solihull. In 1967-8 Rover was sub-merged into Leyland and from there into British Leyland. Solihull ceased saloon production in 1982 (Whipp and Clark, 1986). So, how did the Rover management in Solihull strategize their position in this market place and to what extent were the temporal features of the saloon car sector and the 4WD sector differentiating? Were Rover's management and trade unions aware of the unfolding changes in the temporal categories and imagery of North Atlantic capitalism? This Rover narrative is about a set of managers in Solihull who recognized their financially problematic future in the saloon car business before 1968, possibly as early as in 1956. They were not deluded. They were 'eye to eye' with BMW, Mercedes, Saab and Volvo. The problems unfolding in 1956 were not resolved. By 1968 they seemed to be overwhelming.

Two sets of questions arise. First, how was the international and national situation for saloons understood and acted upon by the strategic management in Solihull in this period of 1956-68? Did they understand the finiteness of the Rover structural repertoire and its capacities? Were they moving away from responsible autonomy? How did they read the future? What were their finite zones of manoeuvre in 1968 other than selling out or going forward into another bankruptcy? Second, how might their situation seem from the perspective of 2005, now that the game is over (Church, 1994; Holweg and Oliver 2005)? Were BMW, Mercedes, Saab (now GM) and Volvo (now Ford) in stronger national infrastructural positions to compete?

A Case of Birth-marking? Rover, Saab,Volvo, BMW and Mercedes

Stinchcombe (1965) proposed that firms are birth-marked by their founding context and key actors. At founding (c. 1908) Rover cars came out of the West Midlands Marshallian industrial district (cf. Jaguar). Their specialized and customized products reflected the perceived desires of consumers and the conventions of coordination (Storper and Salais 1997) as in the fashion, design and craft-intensive work situations. The conventions of coordination rested on reputation, confidence and the specificity of image. These are the Marshallian features found in early Birmingham. The big, unachievable, step would be to shift to medium volume, to alter the role of the technostructure and the occupational articulation of the members of the organization. As Rover evolved, its management were completely aware that they were constructing a British template and they were not emulating or even appropriating an American template. Yet, despite the earlier innovatory history of continental motor firms, it is far from evident that Rover's managements modelled their European competitors in a marketing perspective. In this sense, they did not push back the managerial limits to knowing or achieve a robust, sustainable time-space distanciation into the continental markets (Giddens 1984). Rover's middle management and technostructure were undeveloped relative to the sectors of food, drink and tobacco (FDT) and petrochem icals. Compared with the organizational and management history of Cadbury just a few miles away their technostructure was insufficiently robust. Rover occupied a position in the vertical value chain in which the division of knowledge on its vertical dimension implied dense networks that were not readily transferable abroad (Jacobides and Winter 2005). For example, key suppliers and distributors were highly unarticulated, yet Rover was highly dependent upon them. In this period, 1956-68, it was different for Saab (now GM), Volvo (now Ford), Mercedes (now Daimler-Chrysler) and BMW. The conventions for the coordination of creation in these organizations could cope with a more diverse, multiplicity of production methods and types of output. Conventions were/are embodied in professional and scientific rules. Technocrats create puzzle-solving regimes to search for new standardization coupled to robust design (i.e. stretching) by area of the car (Clark and Staunton 1989). Future timed-space of modular car components and platforms parallels the role of bar coding in the supermarket at that time. The puzzle-solving regimes in Rover differed from those of their continental rivals as speciality car producers. Rover had markedly less investment in research, or, in design and development. Rover also lacked the qualified occupations to construct new puzzle-solving regimes that could engage in higher volume outputs with tighter organization while also absorbing the high variety in new raw materials that began to surface in this period (see Clark and Staunton 1989).

The Narrative Unfolds: Rover I, II, III, IV... end

Applying the principles of critical realism, in conjunction with Abernathy's concept of the productive unit, we contend that there are at least three Rovers - and possibly a fourth, depending on how you analyse the 4WD production unit. First, from 1896 to 1932 there was the founding (1906-10) of an automobile production unit in a former cycle firm. Then came the write-down of investors'capital in 1928 and bankruptcy in 1932 (Rover I). A rescue was imposed by Lucas and Lloyds Bank who inserted two key experts, a design engineer (S.B. Wilkes) and a finance director. Second, from 1932 to 1968 Wilkes imposed a strategic design template of robust design to achieve volume over a longish period in a slow-moving market niche. He implicitly adopted the approach of the productive unit (Rover II). This worked. During World War II, Rover manufactured aero engines. In the post-war period the Wilkes brothers developed the 4WD at Solihull. Third, in 1968, Rover merged into Leyland and Leyland merged into British Leyland (Rover III). After 1968, Rover saloons was a badge in retreat. Despite massive state support for the company's programme for a 'European' car built in Solihull, saloon car production ceased in 1982. In 1968 British Leyland was a very unrationalized firm, which headed into bankruptcy in 1974; this saw the end of the SD1 project and the final closure of the car plant in Solihull. The Rover badge remained around until the early months of 2005. In its final years, Rover's Longbridge plant and associated assets were under the control of a management buy-out, the ill-named Phoenix Consortium.

In the next section, we contend that the saloon side of Rover II (cf. 4WD) could not have formed the platform for a future similar to that achieved by BMW and Mercedes or even by Volvo and Saab. This is a superfactual argument. Rover III was the impossible pathway. The possibilities of a counterfactual based in the 4WD side of Rover II are introduced later.

The End of the Rover II, 1956-68

Rover II began in 1932 and concluded in 1967-8. After 1946, Rover moved forward on three fronts. First, they moved forward in design with the pre-war P2, and then with the P3 in 1949. The P3 sold 130,000 in 15 years with a peak of 15,000 in 1956. Second, they moved forward in the commercially unsuccessful area of engine design based on their war-time activities. Third, they made a major move forward by hybridizing the American Jeep into the Land Rover. The Land Rover was a customized, highvalue-added vehicle anchored in craft assembly. The American Jeep, in stark contrast, was mass-produced. The 1950s were very successful for Rover, especially for the 4WD, which soon out-sold the saloon cars. On the saloon side, the board and inner circle became aware that the costs of product innovation had quadrupled and the problems of process and organizational design were difficult to comprehend. However, good dividend payouts were considered essential to preserve the reputation of the firm (cf. 1932). The P4 had been introduced in 1949 and its robust design proved capable of stretching. Rover was miniscule by world standards, rarely selling more than 35,000-40,000 units for both saloons and 4WDs (cf. Jaguar). Its work places were a honeycombed orderly collection of small spaces (places to those who worked there) bounded by walls. Additions of space took the form of working bays rather than large flexible areas. Even final assembly was divided into zones. The assembly line was as much for the carrying of weight as for pacing the work force. Corporate leadership was in the hands of an experienced and cohesive team typified by longevity and family connections. Management entered the firm through personal contexts and learned their skills through legitimate peripheral participation on the job. Several families were predominant. There was adherence to the marque. The overall approach to corporate control was simple, delegated and essentially paternal. Paternalism was an integral part of management and coordination. There were a whole array of cultural and ideological means of control aimed at preventing internal conflict through neo-hegemonic elements of unitary, communal cohesion around managerial values (cf. John Players: Clark 1972). The ‘Rover News’ and the various company events made extensive use of the image of the family. Paternalism included short bursts of tough love. There was very extensive use of piecework for the long cycle tasks. To a high degree the craft workers and their trade unions controlled the shop-floor, shaped recruitment and policed the ownership of task ensembles. Senior trade union representatives possessed considerable practical skills in working through how changes in the car design affected job content. Work Study in the ICI sense was almost totally absent and even the Lucas concept of production engineering was largely absent. Although employees were recruited within the close neighbourhood, it cannot be said that Rover established, or, sought to establish, a manorial labour market comparable with that of Cadbury at Bourneville a few miles away. Rover possessed a complex social joint regulation (Flanders and Clegg 1954), which meshed and supplemented the simple forms of managerial coordination of production. The coordination of the P-series design cycle was separate from everyday life on the line and was a remarkable structural capacity. Rover possessed extensive internal hierarchical and sectional divisions.

In 1964 the P6 was launched based on designs by Spen King and David Bache. This car was very highly praised for its innovative shaping, aesthetic appeal and for numerous small innovations. However, the P6 as a productive unit (Abernathy 1978) was a Trojan horse and although it sold over a long period it did not produce the revenue necessary to fund the next design cycle. The Trojan horse towed in at least four major problems: logistical flows, weakness of power relations with key suppliers, the division of labour in management and its crisis of authority, and the new paced assembly line and 2000 lower-skilled workers who joined general unions (Whipp and Clark 1986). The industrial relations outcome is well documented.
1968 seemed to be a successful year. Events in Paris, with their shifts on the surface and in the substance of western capitalism, were not so obvious in the Mell Square shopping centre of Solihull, where prosperous and proud Rover employees shopped in Beattie's and arranged their vacations abroad. They were unaware of the complexity faced by their strategic management trying to run two different businesses, 4WD and up-market saloon cars, in the time frames of the 4WD. Unlike the strategic management at John Players in Nottingham, who had already collectively read and could haltingly discuss Touraine's (1965) prognosis on workers' attitudes to technical change, the top men at Rover were not famous for reading about organizing. Moreover, they unwittingly anticipated one famous Porter framework. So, unlike the Mayor of Casterbridge, they harvested at the high point as they saw it and secured a future in order to remember a very comforting past. They also missed a productive opportunity that the 'Tardis-inspired' counterfactual analysis highlights as fleeting and decisive.

The Counterfactual in Outline: Slow Times and Enacted Entrainment

Between 1967 and 1968 Rover's strategic management might have sold the saloon car side to Leyland in order to focus on and fund developments in the 4WD side. That would have encountered stiff governmental opposition and opposition from the trade unions. That said, the choice does mesh with the timed-space of both the market for 4WDs and also the slow times entrained in the finite structural repertoire of the existing firm. Such action would be strategic choice within a viable zone of manoeuvre, internally and externally. The problematic of the car and process design cycles would have been minimized. Moreover, the well-honed repertoire of the 'the selling season and the production season of the year' and of periodic 'design shifts' would articulate smoothly with the social morphology of the factory and who owned its specialized areas. There would be less contesting of the time politics. Enacted entrainment would still require time-space stretching into international markets. Yet those capacities had already been brought into play (e.g. northern Spain). From the perspective of organization design at the time, the focus on 4WD could have become a successful business school case study with the Wilkes brothers as heroes of the British 'Third way'. Solihull might have become an innovation pole. The business schools of Warwick and Aston might have vied to move into that imaginary space. If so, the analytically structured narrative of Whipp and Clark would have been very different.

Rover III as Superfactual?: A Triumph of Hope Over Reality...

In summary, our argument is that Rover II saloons were already sinking and virtually sunk at the moment of their greatest market impact in 1968. Rover III and the state-funded SD1 project, a narrative that was reported in tight dramatic detail in Whipp and Clark (1986), confirms how far from a counterfactual much contemporary reflections really are. In the current crop of counterfactualizing there has been too much reliance upon on a ‘pick and mix’ variant of social science and history, which has displayed slight theoretical justification or practical relevance. Rover I, II and III are quite unlike Cadbury just a few miles away. As Smith et al. (1990) have demonstrated, Cadbury is a very different narrative to that of Rover. In the Cadbury case, the authors indicate that the Penrosian learning dynamic stretches from the English Midlands into the stomachs of North America. Cadbury, in common with some other firms in the domestic food, drink and tobacco sectors (e.g. Players), managed the evolution of business knowledge across this contextual boundary.

Concluding Remarks

The article suggests that a modified Penrosian framework, combined with qualified application of critical realist methodological practices, may contribute to a more coherent and insightful theorizing of the growth process in firms and interorganizational networks. This combination appears to offer something of a methodological bridge between the disciplines, a common vocabulary conveying a more complex and potentially rewarding understanding of time and temporality. We have illustrated these comments with reference to a case study of the Rover Company, which contained strong anticipations of neocritical realist analysis in the manner proposed by Sayer (2000). In so doing, we have identified counterfactual and superfactual arguments in the analytically structured narrative, and commented on some of its neo-Penrosian features, particularly in relation to managerial limits to growth and the finite zones of manoeuvre open to the Rover management team in the years 1968-1974. In concluding the article, we have identified three broad arguments in support of the approach adopted, which are intended to promote discussion on the central theme of the article: first, that this methodological combination can be seen as reviving a long-standing, but much neglected, realist tradition in organizational innovation and entrepreneurship research; second, that it can promote the much-needed contextual ization of organizational phenomena; and third, that it has the potential to contribute more ‘useful’knowledge than that obtained from competing approaches.

Reviving a Realist Strand in Organizational and Entrepreneurship Research

Realism has long intellectual roots in this field of study and its contributory disciplines (Ackroyd and Fleetwood 2000; Swedberg 2000). It is possible to detect a common thread of ideas, emerging out of the Methodenstreit in economics at the end of the 19th century. Weber’s *Sozialekonomik*, an attempt to overcome this divide through a synthesis of historical research and theory, had a great impact on Joseph Schumpeter’s thinking (Swedberg 1991), including his approach to entrepreneurship:

[The] sociology of enterprise reaches much further than is implied in questions concerning the conditions that produce and shape, favour or inhibit entrepreneurial activity. It extends to the structure and the very foundations of capitalist society. (Schumpeter 1949, 158)

Schumpeter’s ideas influenced Edith Penrose, and we have seen how *The Theory of the Growth* *of the Firm* reflects a similar realist concern with uncovering structures and mechanisms, and specifically those ignored by mainstream economics in its 'black box' treatment of the firm. Penrose's interest was sparked by involvement in a substantial piece of qualitative research, examining the growth of a former subsidiary of Du Pont, the Hercules Powder Company (Penrose 1960; Kay 1999). Her eclectic theory incorporates a subtle treatment of meaning and intentionality in human actors (i.e. the dynamics of entrepreneurial judgement at the level of the managerial team, encapsulated in her concept of 'productive opportunity'), but also acknowledges the relative autonomy of environmental selection mechanisms:

'Expectations' and not 'objective facts' are the immediate determinants of a firm's behaviour, although there may be a relationship between expectations and 'facts'- indeed there must be if action is to be successful . . . In the last analysis the 'environment' rejects or confirms the soundness of the judgements about it, but the relevant environment is not an objective fact discoverable before the event. (Penrose 1959, 41)

Penrose's emphasis on the subjective element, whereby firm behaviour is, in the first instance, the product of an 'image'of the environment in the mind of the entrepreneur (Boulding 1956), contrasts with much of the later resource-based literature. However, by elaborating her theory, she helped to perpetuate a strand of research that retains a strong realist flavour (Lawson and Lorenz 1999; Best 2001). Investigations may start at the level of entrepreneurial perceptions, but their scope should be much broader; researchers are challenged to discover how the phenomenon that Penrose conceptualized as 'productive opportunity' articulates with other structures and mechanisms.

Contextualizing Organizational and Entrepreneurial Phenomena

Critical realism raises questions about the preconditions for social phenomena. It is therefore well placed to frame an investigation into contextual and process issues. In considering the context in which organizational innovation and entrepreneurship occurs, we begin to raise important questions about the boundaries, both temporal and spatial, of our research:

We need to know not only what the main strategies were of actors, but what it was about the context which enabled them to be successful or otherwise. This is consistent with the realist concept of causation and requires us [. . .] to decide what it was about a certain context which allowed a certain action to be successful. Often the success or failure of agents' strategies may have little or nothing to do with their own reasons and intentions. (Sayer 2000, 26)

The potential contribution of critical realism is to facilitate a more nuanced understanding of the context in which entrepreneurs exercise strategic choice; critical realism's mechanisms-based paradigm can be seen as a moderating influence on excessively voluntaristic (and deterministic) accounts of entrepreneurial agency (Whittington 1989). Building on critical realism's methodological precepts, research should be capable of better spatial and temporal explanations, tracing the changing 'zones of manoeuvre' of entrepreneurial firms as they interact with the competitive capacities of their contexts (Clark 2000).

Generating More 'Useful'Knowledge

In order to intervene successfully in the world, it is useful to obtain a working knowledge of the relevant structures and generative mechanisms. The principal advantage of critical realism's retroductive methodology, from the perspective of the policymaker or practitioner, is that its purpose is to develop a theoretical understanding of real mechanisms, and the contingent ways in which they combine to generate effects (Subramaniyam 2000). Although isolated, subjective accounts of entrepreneurial agency may be engaging, they have no referent and therefore lack cumulative explanatory power. With its concern for underlying structure rather than surface-level correlations, its opposition to excessive voluntarism and determinism, and its critique of reductionist explanations, critical realism seems well placed to deliver a more informed - though, it has to be conceded, not always 'actionable'- understanding of concrete situations. At present, it is difficult to substantiate this argument, given the limited number of published studies that combine a critical realist methodology with an explicit policy orientation. However, the case material presented in this article indicates something of this potential.

Notes

1. We acknowledge that it is not possible to do justice to Margaret Archer's more recent account of inner conversations in this article, (Archer 2003).
2. http://www.cardiff.ac.uk/newsevents/obituaries/richardwhipp.html
3. The 'analytical' approach to generalization associated with retroduction contrasts sharply with that associated with inductive inference, where the focus is on the extrapolation of empirical regularities. (Danermark, Ekstrom, Jacobsen, and Karlsson 2002, 77).

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References

Abernathy, W.J. 1978. The productivity dilemma: Roadblock to innovation in the automobile industry. New Haven, CT: Johns Hopkins University Press.

Abernathy, W.J., and K.B. Clark. 1985. Innovation: Mapping the winds of creative destruction. Research Policy 14: 3-22.

Abernathy, W.J., K.B. Clark, and A.M. Kantrow. 1983. Industrial renaissance: Producing a competitive future for America. New York: Basic Books.

Abernathy, W.J., and J.M. Utterback. 1978. Patterns of innovation in industry. Technology Review 80(7): 40-7.

Ackroyd, S., and S. Fleetwood, eds. 2000. Critical realism in action in organization and

management studies. London: Routledge.
Archer, M.S. 1995. Realist social theory: The morphogenetic approach. Cambridge: Cambridge University Press.
Archer M.S. 2000. Being human: The problem of agency. Cambridge: Cambridge University Press.
Archer, M.S. 2003. Structure, agency and the internal conversation. Cambridge: Cambridge University Press.
Best, M.H. 2001. The new competitive advantage: The renewal of American industry. Oxford: Oxford University Press.
Blundel, R.K. 2002a. The growth of 'connected' firms: A re-appraisal of Penrosian theory and its application to artisanal firms operating in contemporary business networks. The University of Birmingham (unpublished doctoral thesis).
Blundel, R.K. 2002b. Network evolution and the growth of artisanal firms: A tale of two regional cheesemakers. Entrepreneurship and Regional Development 14: 1-30.
Blundel, R.K. 2007. Critical realism: A suitable vehicle for entrepreneurship research? In Handbook of qualitative research in entrepreneurship, ed. H. Neergard and J.P. Ulhoi. Cheltenham: Edward Elgar.
Blundel, R.K., and P.A. Clark. 2004. Blurred boundaries and contingently finite zones of manoeuvre: Modifying the Penrosian framework. Paper to the conference on Shifting Boundaries: Governance, Competence and Economic Organization in the Knowledge Economy. Bristol, September.
Boulding, K.E. 1956. The image: Knowledge in life and society. Ann Arbor, MI: University of Michigan Press.
Braudel, F. 1969. On history. Chicago: University of Chicago Press.
Castells, M. 1996. The rise of the network society (The information age: Economy, society and culture, Vol. I). Oxford: Blackwell.
Castells, M. 1997a. The power of identity (The information age: Economy, society and culture, Vol. II). Oxford: Blackwell.
Castells, M. 1997b. The end of the millennium (The information age: Economy, society and culture, Vol. III). Oxford: Blackwell.
Church, R. 1994. The rise and fall of the British motor industry. Cambridge: Cambridge University Press. Clark, P.A. 1972. Organizational design: Theory and practice. London: Tavistock.
Clark, P.A. 1978. Time reckoning systems in large organisations. Study of Time III: 391-416.
Clark, P.A. 1985. A review of theories of time and structures for organization studies. In Organizational sociology: Research and perspectives, Vol. IV, ed. S.B. Bacharach and S.M. Mitchell, 35-79. New Haven, CT: JAI Press.
Clark, P.A. 1987. Anglo-American innovation. New York: De Gruyter.
Clark, P.A. 2000. Organisations in action: Competition between contexts. London: Routledge. Clark, P.A. 2003. Organizational innovations. London: Sage.
Clark, P.A., C. Booth, M. Rowlinson, S. Procter, and A. Delahaye. 2007. Project hindsight: Exploring necessity and possibility in cycles of structuration and co-evolution. Technology Analysis & Strategic Management 19: 83-97.
Clark, P.A., and M. Rowlinson. 2004. The treatment of history in organization studies: Towards an 'historic turn'? Business History 46: 331-52.

Clark, P.A., and N. Staunton. 1989. Innovation in technology and organisation. London: Routledge.
Corley, T.A.B. 1993. Firms and markets: Towards a theory of business history. Business and Economic History 22: 54-66.
Danermark, B., M. Ekstrom, L. Jakobsen, and J. Karlsson. 2002. Explaining society: Critical realism in the social sciences. London: Routledge.
Easton, G. 2000. Case research as a method for industrial networks: a realist apologia. In Critical realism in action in organization and management studies, ed. S. Ackroyd and S. Fleetwood, 205-19. London: Routledge.
Evans, R.J. 2000 [1997] In defence of history. London: Granta.
Flanders, A., and H.A. Clegg, editors. 1954. The system of industrial relations in Great Britain: Its history, law and institutions. Oxford: Blackwell.
Giddens, A. 1979. Central problems in social theory. London: Macmillan.
Giddens, A. 1981. A contemporary critique of historical materialism. London: Macmillan. Giddens, A. 1984. Constitution of society. Cambridge: Polity Press.
Giddens, A. 2000. The Third Way and its critics. London: Polity Press.
Gourvish, T. 1995. Business history: In defence of the empirical approach? Accounting, Business and Financial History 5: 3-16.
Gregory, D. 1982. Regional transformation and industrial revolution. Cambridge: Cambridge University Press.
Gurvitch, G. 1964. The spectrum of social time. Dordrecht: D. Reidel. Harvey, D.J. 1990. The condition of postmodernity. Oxford: Blackwell.
Harvey, D.J. 2001. Spaces of capital: Towards a critical geography. Edinburgh: Edinburgh University Press. Holweg, M., and N. Oliver. 2005. Who killed MG Rover? Cambridge: The Cambridge-MIT Centre for Competitiveness and Innovation.
Huygens, M., C. Baden-Fuller, F.A.J. Van Den Bosch, and H.W. Volberda. 2001. Co-evolution of firm capabilities and industry competition: Investigating the music industry 1877-1997. Organization Studies 22: 971-1012.
Jacobides, M.G., and S.G. Winter. 2005. The co-evolution of capabilities and transaction costs: Explaining the institutional structure of production. Strategic Management Journal 26: 395-413.
Jones, C. 2001. Co-evolution of entrepreneurial careers, institutional rules and competitive dynamics in American film, 1895-1920. Organization Studies 22: 911-44.
Kay, N.M. 1997. Pattern in corporate evolution. Oxford: Oxford University Press. Kay, N.M. 1999. Hercules and Penrose. Contributions to Political Economy 18: 67-86.
Kor, Y.Y., and J.T. Mahoney. 2000. Penrose's resource-based approach: The process and product of research creativity. Journal of Management Studies 37: 109-39.
Le Roy Ladurie, E. 1979. The territory of the historian. Hassocks: Harvester. [Translation of Le territoire de l'historien. Paris: Gallimard (1973)]
Lawson, C., and E. Lorenz. 1999. Collective learning, tacit knowledge and regional innovative capacity. Regional Studies 33: 305-17.
Lazonick, W. 1991. Business organization and the myth of the market economy. Cambridge: Cambridge University Press.
Lee, C.H. 1990a. Corporate behaviour in theory and history: (I) The evolution of theory. Business History 32: 17-31.

Lee, C.H. 1990b. Corporate behaviour in theory and history: (II) The historian's perspective. Business History 32: 163-79.
Penrose, E.T. 1959. The theory of the growth of the firm. Oxford: Blackwell.
Penrose, E.T. 1960. The growth of the firm a case study: the Hercules Powder Company. Business History Review 34: 1-23
Penrose, E.T. [1959] 1995. The theory of the growth of the firm, 3rd ed. Oxford: Blackwell. Sayer, A. 2000. Realism and social science. London: Sage.
Schumpeter, J.A. 1949. The creative response in economic history. The Journal of Economic History 7: 149-59.
Smith, C., J. Child, and M. Rowlinson. 1990. Reshaping work: The Cadbury experience. Cambridge: Cambridge University Press.
Sorge, A., and A. van Witteloostuijn. 2004. The (non)sense of organizational change: An essai about universal management hypes, sick consultancy metaphors, and healthy organization theories. Organization Studies 25: 1205-1231.
Stinchcombe, A.L. 1965. Social structures and organizations. In Handbook of organizations, ed. J.G. March, 142-93. Chicago: Rand McNally.
Storper, M., and R. Salais. 1997. Worlds of production. Cambridge, MA: Harvard University Press. Subramaniyam, V. 2000. Critical realism and development programmes in rural South India. Journal of Critical Realism 4: 17-23.
Swedberg, R. 1991. Joseph A. Schumpeter: His life and work. Cambridge: Polity.
Swedberg, R., ed. 2000. Entrepreneurship: The social science view. Oxford: Oxford University Press. Touraine, A. 1965. Workers'attitudes to technical change: An integrated survey of research. Paris: OECD. Whipp, R., and P.A. Clark. 1986. Innovation and the auto industry: Product, process and work organization. London: Francis Pinter.
Whittington, R. 1989. Corporate strategies in recession and recovery. London: Unwin.
Wilson, J.F., and A. Popp, eds. 2002. Industrial clusters and regional business networks in England, 1750-1970. Oxford: Oxford University Press.

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