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WHAT IS A PROCESSUAL ANALYSIS?

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INTRODUCTION

This essay offers a personal and therefore partial view of the nature and conduct of process research in organisational settings. Issues of time, agency, structure, context, emergence and development are crucial in human conduct and have been widely debated by philosophers and social theorists. Over the last 20 years seminal articles and books on time and social analysis have been written by Martins (1974), Adam (1990), Nowotny (1992) and Sztompka (1991, 1993). Meanwhile in the narrower fields of industrial sociology and organisational analysis important contributions have also been made by Clark (1985), Whipp (1994) and Hassard (1996). These writings epitomise the wide diversity of thinking about time, history and process but do not in themselves overturn the truism that in their theorising and empiricism most social scientists do not appear to have given much time to time. For many the social sciences are still an exercise in comparative statics.

It has been a personal ambition over 30 years to capture the dynamic quality of human conduct in organisational settings. For twenty years this was more of a solo journey (Pettigrew, 1973, 1979, 1985, 1987). Latterly I have had the benefit of some companions. (Pettigrew and Whipp, 1991; Pettigrew *et al.*, 1992; Pettigrew and McNulty, 1995; Ferlie *et al.*, 1996). Throughout this period a distinctive style of conducting longitudinal comparative case study research has emerged at Warwick University. Twice I have attempted to follow Donald Schon's (1983) prerequisite for a learning professional and have reflected on that practice (Pettigrew, 1990, 1992). This paper represents a further complementary attempt, but this time with an additional aim. Whereas the 1990 and 1992 papers concentrated on clarifying the theory of method guiding our research, this time I shall endeavour to balance articulation of theory of method with the implementation of that method.

The paper sets out to accomplish this task in the following way. The first section asks two core questions — what is a process, and what is a processual analysis? The attempts made to answer these questions are then consolidated around five internally consistent assumptions guiding processual and contextual research. Section two then moves us into the actual conduct of process research, reflecting in turn on some of the craft problems and choices around issues of units of analysis, contextualisation, time, data types, triangulation, procedure and methods. These input questions of research practice are then linked to the forms of research output possible from using longitudinal comparative case study research. The paper concludes by discussing some of the

limitations of existing process research and how those challenges might be met in future research themes and designs.

WHAT IS A PROCESS? WHAT IS A PROCESSUAL ANALYSIS?

As specialists we are all inclined to ignore the most obvious questions or to be reticent to state the obvious for fear of being obvious. It is noteworthy that although all of the papers in this special issue are in one way or another concerned with the conduct of process research only Tuttle explicitly concerns himself with the meaning of process and offers a specific definition of processual research. At the outset of the 1995 workshop at the University of Tampere which provided the initial stimulus for this special issue, I asked the participants to express the key words they associated with the term process. The key phrases and words which followed were: "flow of events, chronology, mechanism, unfolding, two forces interacting, time, language, context, outcomes, linking things together, individuals and collectivities, history, consistent story, change and long period." This flow of words about process led to the ironic remark that if process is of all that, what is not process? Interesting as that question is, it is not a direction to pursue now.

Van de Ven (1992: 169) has offered an instructive formal definition of what is process. He argues that process is often used in three ways in the literature: (1) as a logic used to explain a causal relationship in a variance theory; (2) as a category of concepts that refer to activities of individuals or organisations; and (3) as a sequence of events that describes how things change over time. Of these three approaches only the third explicitly and directly observes the process in action and thereby is able to describe and account for how some entity or issue develops and changes over time. Thus the working definition of process used in this paper is: a sequence of individual and collective events, actions, and activities unfolding over time in context.

Behind and beneath this generic definition of process lies a plethora of distinctions and complexities best revealed by posing our second question — what is a processual analysis and indeed, what is the purpose of a processual analysis? Purpose is fittingly captured by the word how, but in fact most process studies are preoccupied with describing, analysing and explaining the what, why and how of some sequence of individual and collective action. The driving assumption behind process thinking is that social reality is not a steady state. It is a dynamic process. It occurs rather than merely exists (Sztompka, 1991). Human conduct is perpetually in a process of becoming. The overriding aim of the process analyst therefore is to catch this reality in flight.

Exposing processes requires a process vocabulary. The language of states is superseded by an active language of becoming, emerging, developing, transforming, and decaying. Language can be an analytical prison. In a recent paper, Pettigrew and Webb (1996) analyse how the language of business strategy has become locked into the vocabulary of static states when in fact most managers are aware of the transient and emergent qualities of their espoused and realised strategies. Pettigrew and Webb (1996) then go on to develop a novel typology of strategy expressed in the active language of consolidating, internationalising, downscoping and so on.

But an active language has to be grounded in action and this is where that awkward sociological term agency is at the heart of any processual analysis. Actions drive processes but processes cannot be explained just by reference to individual or collective agency. Actions are embedded in contexts which limit their information, insight and influence. But the dual quality of agents and contexts must always be recognised. Contexts are shaping and shaped. Actors are producers and products (Giddens, 1979, Sztompka, 1991). Crucially for any processual analysis,

this interchange between agents and contexts occurs over time and is cumulative. The legacy of the past is always shaping the emerging future. What happens, how it happens, why it happens, what results it brings about is dependent on when it happens, the location in the processual sequence, the place in the rhythm of events characteristic for a given process.

So time and history are at the centre of any process analysis. Historians and historiography have been around long before this century's group of social scientists had their impact and certainly long before contemporary management theory was thought of. And yet history and historians are often misguidedly and implicitly thought of as worker drones — fit only for laborious effort in dusty archives. This dreadful characterisation not only drives out the historical method from organisational analysis but also excludes antecedent conditions from our explanations of processes and retrospective date as a pragmatic source of long time series. Historians are often stereotyped as storytellers; mere describers of events; pervaders of chronologies. Meanwhile the superior social scientist rises above and beyond mere events and describes and conceptualises, models, analyses, measures and explains. For the process analyst events and chronologies are crucial building blocks but only building blocks. The aim in a processual analyst is not to produce a case history but a case study. The case study goes beyond the case history in attempting a range of analytical purposes. Firstly there is a search for patterns in the process and presumably some attempt to compare the shape, character and incidence of this pattern in case A compared with case B. Secondly, there is a quest to find the underlying mechanisms which shape any patterning in the observed processes. The process analyst's repetitive questioning about how embodies this constant search for underlying mechanisms which drive the processes. Such mechanisms may be directly observable, indeed part of the conscious intentions of key actors in this process. They may also be a feature of the immediate or more distant context and not part of the sensibility of local actors. The mechanisms may also be elements in the interactive field occasioned by links between levels of process and context around the primary process stream under analysis. The teasing out of these mechanisms in this interactive field represents one of the greatest inductive challenges for process scholars and an area of intellectual challenge which is as difficult to describe as it is to achieve and publically justify.

The third analytical factor which may turn a case history into a case study reminds us that inductive pattern recognition has also to go hand in hand with deduction. Few process scholars enter the field with an empty head waiting to be filled with evidence. Scholars are not just scientists, they remain obstinately human beings and as such are carriers of assumptions, values and frames of reference which guide what they are capable of seeing and not seeing. The aims of our research and the themes and suggestions which embody these aims have a crucial role to play in this pattern recognition process. As I shall later explain, my own inclination over time has been to increase this deductive component in the inseparable balancing act of deduction and induction in process work. I have seen too many studies falter and too many individuals psychologically crushed by unstructured data sets.

But structuring has its limits and no more so than in assumptions of path dependent processes. With time series analyses there is always the literary comfort of fixed or predetermined phases and stages. With the agreeable structuring of phase models should also come the discomforting recognition that shifting contexts may mean that social processes are inherently discontinuous and open-ended. Sztompka (1993) reminds us that some processes may be linear, directional, cumulative and perhaps irreversible, while others may be non-linear, radical and transformational. Openness to these possibilities is a key intellectual requirement for the process scholar.

Thus far I may have underplayed the role of context in a processual analysis. If the process is our stream of analysis, the terrain around the stream which shapes the flow of events and is in turn shaped by them is a necessary part of the process of investigation. However, the interactionist field of analysis occurs not just in a nested context but alongside other processes. Metaphorically we are studying some feature of organisational life not as if it represents one stream in one terrain, but more like a river basin where there may be several streams all flowing into one another, dependent on one another for their life force and shaping and being shaped by varieties of terrain each constraining and enabling in different intensities and ways. This quality of the interactionist field moves us into the form of holistic explanation which is the apotheosis of the processual analysis. We are now a long way from what Abbott (1992) has described as the "variables paradigm". "Our normal methods parse social reality into fixed entities with variable qualities. They attribute causality to the variables. . . rather than agents. Variables do things, not social actors. Stories disappear." (Abbott, 1992:1). From this variables paradigm and its preoccupation with theorizing about individual causes, we are now attempting to theorize about constellations of forces shaping the character of the process and its outcome.

The time quality of a processual analysis thereby lies in linking processes to outcomes. The holistic ambition is not just about pattern recognition of the process stream, or handling the analytical complexities of explanation in the interactionist field, but also lies in linking these analyses to the outcomes of the process under investigation. I recognise that for some process scholars there is not an ambition to capture this link between process and outcome, but would argue any processual analysis is not only incomplete without this step but also is pragmatically endangered by this omission. In what follows I will give this point additional emphasis. The irreducible purpose of a processual analysis remains to account for and explain the what, why and how of the links between context, processes and outcomes. I would like to conclude this statement of theory of method for conducting processual research by reaffirming five internally consistent guiding assumptions. They are :

1. embeddedness, studying processes across a number of levels of analysis;

2. temporal interconnectedness, studying processes in past, present and future time;

3. a role in explanation for context and action;

4. a search for holistic rather than linear explanations of process; and

5. a need to link process analysis to the location and explanation of outcomes.

What precepts about process guide our work? The first is that social processes are deeply embedded in the contexts that produce and are produced by them. Part of the interactive field is the analysis of how outer and inner contexts surrounding firm level processes shape this process. Outer context includes the economic, social, political, competitive and sectoral environments in which the firm is located. Inner context refers to the inner mosaic of the firm; the structural, cultural and political environments which, in consort with the outer context, shape features of the process. Processes are embedded in contexts and can only be studied as such. Thus explanations of the changing relative performance of firms should be linked to higher levels of analysis (sector changes and alterations in national and international political and economic context), and lower levels of analysis (the drivers and inhibitors of change characteristic of different firms' culture, history, and political structures). There is also the recognition that there are processes at different levels of analysis, (firm level of internationalization as well as sector level internationalization),

and also multiple processes at the same level of analysis (firm level of strategy and technology development). A source of change is the asymmetries between levels of context, where these intertwined processes often have their own momentum, pace and trajectory. Thus the rate and trajectory of change in an industrial sector facing significant boundary changes may be much faster than the sensing and adjustment pathways of individual firms to the regrouping of the sector. The relative slowness of the sensing and adjustment process of firms, and their failure to recognize that the bases of competition may have changed in that sector, is a key factor explaining their loss of competitive performance (Pettigrew and Whipp, 1991).

The second guiding assumption of the Warwick process research is the need to reveal temporal interconnectedness. Understanding the sequence and flow of events over time is a crucial requirement for the process scholar. There is the looming presence of the heavy hand of the past. History is crucial. Antecedent conditions shape the present and the emerging future. But history is not just events and chronology, it is carried forward in the human consciousness. The past is alive in the present and may shape the emerging future. Beneath the surface events and chronology, the process scholar searches for recurrent patterns in the process, for structure and underlying logics. But there is no assumption of predetermined timetables, of ordered and inevitable sequences or stages. Trajectories of strategy processes are probabilistic and uncertain because of changing contexts and human action. As Loasby (1976:5) has so eloquently put it, "if choice is real, the future cannot be certain; if the future is certain, there can be no choice."

Loasby's telling phrase reminds us that context and action are also inseparably intertwined. We cannot talk about process without also discussing human agency in context. Here the key starting point is that it is not a question of nature or nurture, or context or action, but context *and* action. Context is not just a stimulus environment but a nested arrangement of structures and processes where the subjective interpretations of actors perceiving, learning, and remembering help shape process. Thus organisational processes are both constrained by features of context such as tradition and technological commitments and also shape contexts by, for example, preserving or altering technological strategies or corporate cultures. We recognise Giddens' (1979) theoretical contribution of superseding the dualism of structure and agency by creating a duality between the two. This duality provides two crucial analytical building blocks for the process scholar. First of all, structure and context are conceptualized not as barriers to action but as essentially involved in its production. And, second, there is scope to demonstrate empirically how aspects of context (such as a deteriorating industrial and economic scene) can be mobilized by key actors as they seek strategic outcomes important to them (Pettigrew, 1985; Pettigrew *et al.*, 1992).

Our fourth guiding assumption in the conduct of process research is a natural concomitant of the first three. Links between multiple levels of context can only be established by exposing actions and recurrent patterns in the processes under investigation over years and sometimes decades. Time is captured in our work through a combination of retrospective and real time analysis. The longitudinal comparative case study method has been a primary approach. A natural advantage case studies have over other comparative methods is the opportunity to explore holistic explanations within and between cases. There is scope to examine causal processes directly, to look at them in context. The world is not lost in abstract, timeless scores on variables, but as Tilly (1984: 14) puts it, the focus is on "real times, people, and places as referents".

In holistic explanation causation is neither linear or singular. The search is not for single grand theories. As Tilly (1984) indicates, the pursuit is for proximate, not final causes. Or as Ragin

(1987) contends, the search is for multiple intersecting conditions which link features of context and process to certain outcomes. Thus in our competitiveness research, five key features distinguished our high performing automobile, investment banking, insurance and book publishing firms from their lesser performing comparators. But the real issue explaining relative competitive performance was not just the isolation of these five features of environmental assessment, human resources as assets and liabilities, managing strategic and operational change, leading change and coherence; but by the convergent interaction and interconnected loops among the five features, in the firm over time.

Our fifth guiding assumption for conducting process research is the ambition to link the analysis of process to outcomes. There are great complexities and many unresolved problems in attempting the form of highly contextual and longitudinal research outlined here. These complexities naturally encourage the wary practitioner to look for ways of reducing the complexity. I concur with Tilly (1984) and Ragin's (1987) suggestion to stick with the careful comparison of a small number of cases (often in our example, 6–10). Other routes to simplification are rehearsed in Pettigrew (1990). The fifth guiding assumption seeks complexity reduction through research design. There are great advantages in having a clear outcome to explain in process research. Thus in our competitiveness research the outcome variable was the differential performance of the eight firms in the study (Pettigrew and Whipp, 1991). Whilst in our research on public sector strategic change processes, the outcome variable was the differential rate of change amongst sets of health authorities facing similar content areas of change (Pettigrew et al., 1992).

Building an outcome into a process research design has a number of advantages. Firstly, the outcome both simplifies and complicates the study by providing a focal point, an anchor for the whole investigation. Secondly and crucially, there is the possibility to explore how and why variations in context and process shape variability in the observed outcomes across the comparative investigation. How policy outcomes are shaped by the process and the context is after all one of the central distinguishing questions that can be posed in process research. In many social science fields, and certainly in equilibrium models in Economics, the interest is only in the result of the process, not the process itself. Process research is capable of generating sound knowledge not only of processes and outcomes but also of why and how outcomes are differentially shaped by processes.

CONDUCTING PROCESSUAL RESEARCH

The practice of research is best informed by a theory of method which clarifies and makes explicit the range of guiding assumptions shaping the conduct of that research. Explicitness of theory of method is still unusual in qualitative social science research and this is one reason why such research is often contested on the grounds of the validity and reliability of its knowledge base. The previous section of this paper presented a broad guidance framework but as ever the real challenge lies in applying this theory of method. In this kind of research there is no ideal set of procedures, steps, or rules of application, but from practice it may be possible to induce a variety of patterns which can be used to guide conduct in processual research. I shall present these application steps as a set of questions about the inputs and outputs of conducting longitudinal comparative case study research. These questions raise important theoretic choices whose resolution can only be customised in a situationally specific way, research project by research project.

The practical questions and steps outlined here are mainly derived from three kinds of sources. Firstly, the range of published empirical studies conducted by Warwick based colleagues and myself (Pettigrew, 1973, 1979, 1985; Pettigrew and Whipp, 1991; Pettigrew, *et al.*, 1992; Pettigrew and McNulty, 1995; Ferlie *et al.*, 1996). Secondly, a recent excellent PhD prepared at Warwick (Fenton, 1996) and thirdly from discussions amongst a group of international colleagues working on a very large international comparative study called the new internal network organisation: process and performance.

On the input side the central practical issues relate to ethics and contracting; purpose, themes and research questions (within cycles of deduction and induction); units of analysis; contextualisation; time; and data types.

Ethics and contracting are crucial in all research but they are especially important in processual research where there are often extended and close links between researcher and host case study organisations. From my perspective the moral basis of what we do as researchers is linked to issues of free choice of participation in the research by all potential respondents; respect for all persons and points of view and clear contracting at the front end of the research assignment about access and publishing. Issues of company and individual confidentiality, anonymity and attribution need to be negotiated at the outset of the research. We have a preference for retaining the right to use the proper name of case study firms because this adds further interest and visibility to the findings. Normally individuals are protected by agreement about anonymity and non-attribution. This is particularly important in studies of managerial elites where norms of privacy are well established. (Pettigrew and McNulty, 1995). However, as in the study of strategic change in ICI (Pettigrew, 1985), sometimes power figures are so visible (the Chairman of ICI), it was impossible to protect the identity of individuals.

Our normal contract for publishing involves a blanket offer that the host organisation's representative will have the opportunity to read all publications prior to publication. The purpose of this access and feedback is to correct any factual errors and check for the inadvertent release of commercially sensitive information. The challenge that may arise from this process, which can focus on questions of fact and interpretation, can be very useful not only in calming the host firm but also in generating new data and ideas for the researcher. The researcher's retain editorial control over the final publication otherwise there is no point in agreeing to go ahead with this research in that particular case study firm.

The other central issue in contracting is the discussion about reciprocity. If the research site is to give so much by way of time and information what do they receive back? As I have argued elsewhere (Pettigrew, 1990) social scientists have no god given right to expect other people's organisations to be their laboratories. There are many options to satisfy the reciprocity question. Offering to reciprocate for access by running a research in action workshop at the completion of the research process we have found to be particularly valuable. These workshops not only help the host firm to say yes to access, they also provide a validity check on data, interpretations and through a flow of feedback more high quality data. Most importantly, the offer to run the workshop is a clear sign of respect for your research partner and a tangible form of giving for what you may have taken in the research process.

Process research is best characterised in terms of cycles of deduction and induction. In this view, the essential deductive drivers of the research include foresight about the primary purposes, themes and questions. These elements will be embedded in and arise from an assessment of the strengths and weaknesses of existing theory and empirical findings and will be represented in the conceptual vocabulary of the research. The choice of vocabulary is a crucial boundary setter for the research, simultaneously opening up and closing down various analytical pathways and

conceptual frameworks. Different scholars vary in the degree of formality with which they express the guiding questions for the research. Some choose high formality and wish to specify propositions or hypotheses. My own preference is to step back from that degree of formality but to demand deductive structuring in the form of articulated research themes and questions. As I have already indicated, there is real virtue in specifying an outcome to explain in process research. The outcome is used to create variability in the research design and provide an anchor in the study — a constant simple repetitive question which keeps the researcher on track through the interactive cycles of deduction and induction.

In process research on change we have used a number of outcome variables, ranging from the differential impact of OD change resources in ICI (Pettigrew, 1985); to the differential pace of change in health authorities (Pettigrew et al., 1992) to the explanations of performance differences between firms in the same and different industries (Pettigrew and Whipp, 1991). These outcome questions impose further discipline on the research process by requiring research designs which build in outline comparators, for example, high and low performers or fast and slow change processes.

But this deductive structuring is only a prelude to a more open-ended process of inductive reasoning and pattern recognition. An overall cycle of deduction and induction in a study could include:
the core question of the study → related themes and questions → preliminary data collection → early pattern recognition → early writing → disconfirmation and verification → elaborated themes and questions → further data collection → additional pattern recognition across more case examples → comparative analysis → a more refined study vocabulary and research questions.

It is in this constantly iterating cycle of deduction and induction that the real creative process of the research takes place. My experience of doing this in many studies and observing many colleagues and doctoral students engaging in the process, is that the creative challenges very quickly expose big differences in conceptual ability, capacity to inductively recognise patterns in data and, of course, skill and perspective in the process of data collection itself. On top of these critical factors, writing skill also becomes crucial in representing patterns identified in the research process.

Aside from the initial deductive themes and questions there are many aids to pattern recognition in process research. A theoretically informed interview pro-forma is an important mechanism to build structure into the data collection process. The Warwick context, content and process analytical framework (Pettigrew, 1990) has been used regularly to guide the formulation of such pro-formas with questions being tailored around individual study aims and the contextual nuances of particular cases. In comparative case study work such pro-formas provide the analytical spine for the study — a constant reference point and tracking device through the study. Normally such pro-formas are tested and refined in the set of early interviews. These interviews would ideally be preceded by the collection and analysis of historical documents. Historical documents have many uses but at this early stage of the research they are used to establish the core of the chronology of the process and identify key individuals and transition points in the process. These individuals and the what of the chronology are then explored much more fully in the interview process whose prime purpose is to integrate information about the what, why and how of the process under investigation.

In parallel with deliberations about research themes, questions and pro-forma generation, a range of other choices have to be made. Amongst these include the primary units of analysis in the study; how context is to be defined and operationalised; and the time frame of the study. Each

of these areas of choice raise a whole series of related questions which cannot be adequately dealt with in this paper. Whatever primary unit of analysis is chosen, whether it be a stream of activity, an organisation, or a network of organisations, that unit of analysis has to be contextualised. Elsewhere (Pettigrew, 1990, 1992), I have argued for processual analyses to be embedded in a set of interrelated levels of analysis characterised as the outer and inner contexts of the firm or organisation under study. The precise choices about how many levels of context to bring into the study are likely to be shaped by the content of the research problem, the research themes and questions driving the study, the availability of relevant data sets and the ambitions and resources of the researchers engaged in the research process.

Time is a central mobilising preoccupation of the process scholar. Without temporality there is no scope to reveal the dynamics of the process; the relationship between the past, present and future; the interrelationship between different levels of context on the emerging process or the interdependent effects of context and action. But how is the time series to be captured? For an extended time series of 10–30 years (see Pettigrew and Whipp, 1991) some combination of historical and real time analysis is clearly necessary and appropriate. Judgements have also to be made about when a process begins and ends in any study and again a pragmatic mixture of the particular flow of events in any case, the core questions of the study and resource constraints all combine to inform the choice of the time series. The time framework in the study exposes a chronology which becomes the initial organising mechanism for analysis. What are the key sequences of action, what superseded what, what were the key transition points and who were the critical personalities? What events at other related levels of analysis impacted on the core stream of activity? With the exposure of the historical time series, what were the underlying continuities, the key moments of emergence and mobilisation of an idea or a group of key power figures? Is there evidence of path dependency in the process under review? Is there evidence of upward or downward spirals of energy and effect in the process? Who are the winners and losers in the process, the doubters, the disengaged and the champions for change? Is the pace of change faster in this part of the organisation than that part? If so why and how? What features of context and action are driving the process? Is the sequence of action critical in accelerating or decelerating the process? If claims are being made for change what was happening at time t_1 and what is happening now? What indicators can be assessed at each of the two time points to corroborate movement? What are the intended and unintended consequences of the revealed pattern of continuity and change?

THE OUTPUTS AND LIMITATIONS OF PROCESS RESEARCH

Elsewhere in this special issue Bengtsson, Elg and Lind discuss the problems case study researchers have in publishing their work. They marshall some evidence to show that the more conventional criteria of nomothetic research are often used to criticize case study research resting upon a more idiographic research process. Bengtsson *et al* make an important point and certainly many process researchers feel the reception given their work by so called mainstream journals is curt, dismissive and unsympathetic. However, as a reviewer often used by such mainstream journals (who ought to be sensitive to the issues; if not gratuitously sympathetic to publishing process research), I can see the other side of the story. The problems of presenting case studies as atheoretical, descriptive case histories. The failure to locate case studies in existing conceptual frameworks and to interrogate the date against comparable empirical findings. The limited attempt to specify research objectives and research questions. The sketchy explanation and

justification of data sources and the almost complete neglect of how the data were analysed. The inability to locate either the case findings or the conceptual framework in the paper against more general arguments and debates in this field. The failure to argue why and how this paper makes a distinctive and additive contribution to either theory, method, and empirical findings in this or that area of knowledge. Apparently, for some authors it is not a question of there being different expectations and standards in publishing case study research, but rather there are no standards at all.

Presenting process research based on comparative case study findings in article mode is not an easy task and this is why so much memorable case study work often appears in research monograph form. There are clearly varieties of research output from process research which may be deliverable at different points in the research process and angled to different audiences using a range of styles of presentation. Seeing this choice and exercising it is a crucial way of building up a corpus of ideas before eventual presentation to mainstream academic journals. Elsewhere (Pettigrew, 1990) I have described four forms of case study outputs: the case as analytical chronology, the diagnostic case, interpretative/theoretical cases and meta level analysis and writing across a number of cases.

The case as analytical chronology represents a crucial starting point in scholarly writing and an important island of progress in the deductive — inductive cycles mentioned earlier in this paper. Committing oneself to early writing is a vital step in the intellectual process of pattern recognition and can be a positive measure in confidence building. Even the step before the analytical chronology — writing the case history can help in getting on top of the data. However, the analytical chronology goes further in reaching towards theory presentation, in clarifying and stating preliminary patterns in the data, in establishing sequences across levels of analysis and in building up the analytical themes embedded in the interview pro-forma. Once an analytical vocabulary has been tested in a single case presentation, the writer is then in a much stronger position to take these ideas to another outlier case representing the other end of the outcome variable built into the study. Exposing cases at each end of the spectrum then provides another opportunity to raise additional dimensions and/or factors which explain the empirical variation and this affords a further chance for more pattern recognition. And so the cycle of induction and deduction goes on.

The final goal (for that study) is meta level analysis and presentation. Here there is the opportunity for broad thematic writing, linking the theoretical and empirical findings across cases to wider bodies of literature. Displaying the evidence now becomes even more important because all social science writing is vulnerable to the gaps which appear between more elaborated conceptual ideas and the data needed to substantiate those ideas. Quotes may be used from interviews, articles, internal documentation and annual reports. In articles visualisation of the evidence not only cuts down on the word length but also acts as an important attention director in what are often qualitative arguments. Process studies can often utilize quantitative evidence and diagrams, charts, tables, graphs and time series chronologies are all notable ways of visualising the evidence. With visualisation can also come verification, the amassing of evidence to consolidate an argument and establish an analytical theme. Through of all of this, the writing skill of the historian is of signal importance in maintaining a story line whilst constantly iterating between the particular and the general.

Process research is a craft activity full of intuition, judgement and tacit knowledge. Yet there are some identifiable rules of the game which can help structure its design, social process and presentation. This article has attempted to codify some features of these rules without implying there is a single way to carry out processual inquiries.

Like all forms of social research, process work has its strengths and its weaknesses, its virtues and its limitations. The major contribution of process research (as characterised here) is to catch reality in flight, to explore the dynamic qualities of human conduct and organisational life and to embed such dynamics over time in the various layers of context in which streams of activity occur. The price of this dynamic analysis is the missed opportunity to see the much wider terrain in which the normally limited set of comparative cases under study are located. In our most recent research at Warwick we are attempting to combine the strengths and weaknesses of our customary comparative longitudinal case study work with large scale mapping studies of the phenomena under investigation.

Thus in our current research on the power, influence and impact of chairmen and non-executive directors in the top 250 U.K. plcs detailed processual analysis of board dynamics are being carried out alongside survey data collected from board members of the top 500 plcs. (Pettigrew and McNulty, 1995; McNulty and Pettigrew, 1996; Pettigrew and McNulty, 1997).

In two other large research programmes on the transformation of organisational structures, systems and processes, we are part of large international research teams mapping the nature and extent of organisational transformations within and across international boundaries. In one study computerised data bases of accounts of organisational changes are being coded and analysed and outlier firms then studied for processual dynamics (Lewin and Jahng, 1997; Pettigrew and Webb, 1996). In the second project on the new internal network organisation: process and performance, a team of scholars from Warwick, Japan, France, the Netherlands, Spain, Sweden and Switzerland are studying the diffusion of organisations with network characteristics in the U.K., Europe, Japan and the U.S.A. In this study large scale surveys of the top 1200 firms in the U.K., Europe, Japan and the U.S.A. are providing evidence about the extent of "n" form diffusion and testing for the performance consequences of "n" form adoption. Complementing these surveys are 24 case studies which will allow us to explore the more processual questions about the what, why and how of firms moving towards "n" form characteristics and the consequences of doing so in management terms. Together these studies will provide new learning about how to combine processual analysis with the large scale statistical mapping of trends in corporate governance and organisational transformation.

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