

A CULTURAL DIVIDE;

NEW TECHNOLOGY AND THE WORK ORGANISATION
OF FINANCE PERSONNEL IN BRITISH AND
WEST GERMAN INDUSTRY

VOLUME I

SUBMITTED BY INNES DENNISE NEWMAN
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF ASTON IN BIRMINGHAM

June 1987

This copy of the thesis has been supplied on condition that anyone who consults it is understood to recognise that its copyright rests with its author and that no quotation from the thesis and no information derived from it may be published without the author's prior, written consent.

THESIS SUMMARY

THE UNIVERSITY OF ASTON IN BIRMINGHAM

A CULTURAL DIVIDE: NEW TECHNOLOGY AND THE WORK ORGANISATION OF
FINANCE PERSONNEL IN BRITISH AND WEST GERMAN
INDUSTRY

Submitted by Innes Dennise Newman
For the degree of Doctor of Philosophy
1987

The research investigated the effects of technical change on work organisation and the ways in which national culture may influence technological utilisation within industrial finance functions. Operating within a Weberian conceptual framework, the methodology embraced both institutional and ideational approaches. That is, cross-national analyses of institutional structures and processes using secondary data and the attitudes of respondents using primary data collected through in-depth interviews with 147 British and West German respondents.

It was argued that making sense of the cross-national differences found in the historical development, organisation and operation of three institutional phenomena (jurisprudence, State education, the occupation of accountancy) depends on understanding underlying values and ideologies. Since these were also clearly reflected in differing cross-national attitudes to work organisation, it was further argued that 'culture' was the single most important factor influencing working arrangements: particularly in respect of the functional governance of the productive process and the division of labour within finance functions. Pre-existing forms of work organisation were found to be the single most important factor influencing the many cross-national differences in the utilisation of new technology.

The definition of culture was extended retrospectively to account for social constructions of reality and intentionality: and prospectively to embrace the dialectic between structural form and operational process. This definition was applied to taxonomic, critical and processual theoretical frameworks of the professions and the critical approach to technical change. It was concluded that none of these frameworks could adequately explain the nature of the cultural divide and that a cultural perspective provides leverage for future empirical work and theoretical development.

Key words for the national Index to Theses

Culture

New Technology

Work Organisation

Industrial Finance Functions

DEDICATION

To my Mother, for her faith, love and support.

ACKNOWLEDGEMENTS

I am grateful to the Economic and Social Research Council for the financial support of this project. Partly because I was and remain convinced of its importance: and partly because I feel I have benefited immeasurably from the learning process in terms of self-perception and, relatedly, a changed social construction of reality.

I was fortunate to profit from the analytical expertise and solid guidance of my supervisor, Professor John Child. I remain grateful for his advice and support. I also wish to thank my associate supervisor, Mr Paul Collier, for his valuable instruction and suggestions in the early stages.

Conducting academic research is enriched by informal contact. For their cheerfulness, friendliness and moral support Mrs Vera Green and especially Mrs Beryl Marston were second to none.

Finally, the success of empirical research is dependent on suitable sites and the co-operation of respondents. I am indebted to all participants for their hospitable receptions, considerable interest and high degree of co-operation. And particularly to the West German interviewees for their generous efforts which enabled me to maximise data collection during my stay in the Federal Republic.

CONTENTS

VOLUME I

LIST OF EXHIBITS	8
LIST OF TABLES	10
AN ESSENTIAL QUOTE	12
PART ONE	
THE FOUNDATIONS OF THE RESEARCH	13
CHAPTER ONE	
REVIEW OF THE EVERYDAY SOCIAL IMPORTANCE OF THE RESEARCH	14
1.1 Introduction	15
1.2 Social Commentaries on New Technology and the Professions	17
1.3 Summary and Principal Research Implications	28
CHAPTER TWO	
THEORETICAL PERSPECTIVES AND ISSUES	33
2.1 Introduction	34
2.2 Culture - Theoretical Problematic and Research Implications	35
2.3 The Professions - Theoretical Problematic and Research Implications	44
2.4 Technical Change - Theoretical Problematic and Research Implications	56
2.5 Synopsis of Theoretical Issues to be Addressed	73
2.6 Summary	81
Notes to Chapter Two	85
CHAPTER THREE	
THE CONCEPTUAL FRAMEWORK AND PROCESS OF THE RESEARCH	86
3.1 Introduction	87
3.2 Theoretical Perspectives on Social Science	89
3.3 Further Theoretical and Practical Considerations Influencing Research Strategy and Design	100
3.4 Operationalised Definitions	109
3.5 Summary of Research Objectives, Strategy, Design and Methodology	112
3.6 Selection of Sample	118
3.7 Comparative Features of the Cross-Nationally Matched Pairs of Companies	123
3.8 The Conduct of the Research	124
3.9 Interpretation and Presentation of the Findings	136
3.10 Cross-National Research Problematic	142
3.11 Summary	143

PART TWO	
THE EMPIRICAL FINDINGS	145
CHAPTER FOUR	
CROSS-NATIONAL COMPARISON OF THE INSTITUTIONAL DIMENSION	146
4.1 Introduction	147
4.2 The State Education Systems	148
4.2.1 Structures and Curricula	148
4.2.2 Education and the Economy	157
4.3 Occupational Institutionalism	164
4.3.1 Structural Relationships	164
4.3.2 Operational Characteristics	171
4.4 Summary	185
Notes to Chapter Four	189
CHAPTER FIVE	
CROSS-NATIONAL COMPARISON OF INSTITUTIONS, THE CONCEPTUAL- ISATION OF INDUSTRIAL ACCOUNTANCY AND THE EMPIRICAL CONTEXT	190
5.1 Introduction	191
5.2 Historical and Institutional Influences on the Development of Financial and Management Accounting Within Industry	193
5.3 Organisational Contexts	209
5.3.1 Functional Operational Relationships	209
5.3.2 Structural Comparisons	218
5.4 Summary	237
Notes to Chapter Five	242
CHAPTER SIX	
CROSS-NATIONAL COMPARISON OF THE WORK OF FINANCE PERSONNEL IN BRITISH AND WEST GERMAN INDUSTRY	243
6.1 Introduction	244
6.2 The Division of Labour Within Industrial Finance Functions	246
6.3 The Roles and Responsibilities of Financial and Management Accounting Managers	267
6.4 Summary	299
Notes to Chapter Six	305
CHAPTER SEVEN	
CROSS-NATIONAL COMPARISON OF THE UNDERLYING PROCESSES AND MAJOR DEVELOPMENTAL STAGES OF TECHNICAL CHANGE WITHIN INDUSTRIAL FINANCE FUNCTIONS	306
7.1 Introduction	307
7.2 The Empirical Context	309
7.3 The Reasons for Technical Change	316
7.4 Systems Design and Implementation	327
7.5 Major Developmental Stages of Technological Change	346
7.5.1 Centralised Batch Processing	346
7.5.2 Micro Computing	352
7.5.3 Information Technology	356
7.6 Summary	359
Notes to Chapter Seven	363

CHAPTER EIGHT	
CROSS-NATIONAL COMPARISON OF NEW TECHNOLOGY AND THE WORK ORGANISATION OF INDUSTRIAL FINANCE PERSONNEL	364
8.1 Introduction	365
8.2 Financial Accounting	367
8.2.1 The Structure of Departments	367
8.2.2 The Quality of Work at Different Hierarchical Levels	373
8.3 Management Accounting, Information or Controlling	382
8.3.1 The Quality of Work at Different Hierarchical Levels	382
8.3.2 Changing Roles	404
8.4 The Question of Convergence	413
8.5 Summary	421
Notes to Chapter Eight	427

PART THREE	
CONCLUSIONS AND SPECULATION	428

CHAPTER NINE	
THEORETICAL PERSPECTIVES, REVIEW AND FURTHER RESEARCH	429
9.1 Introduction	430
9.2 Culture	432
9.3 The Professions	450
9.4 Technical Change	466
9.5 Summary	479
Notes to Chapter Nine	483

CHAPTER TEN	
POSTSCRIPT	485
10.1 Introduction	486
10.2 The British Education System	488
10.3 Organisation Structuring and Policies in Britain	494
10.4 The British Professional Accountancy Bodies	503

BIBLIOGRAPHY	508
--------------	-----

VOLUME II: APPENDICES

Appendix 1: Interview Schedules	3
Appendix 2: Description of Companies, Coding for Respondents and Organisation Charts	6
Appendix 3: Cross-National Comparisons of Functional Responsibilities of Finance Departments	88
Appendix 4: Computer Systems Flowchart from the Finance Department, Head Office, West German Organisation I	96
Appendix 5: Computing Questionnaire from the Finance Department, Head Office/Operating Site, West German Organisation II	98
Appendix 6: Selection of Quotations about the Effect of Technical Change on the Nature of Financial Accounting Work	109
Appendix 7: Résumé of Research Findings	115

LIST OF EXHIBITS

Section 3.9

- 3a Two cross-national dimensions! 140

Section 4.3

- 4a Integration of the British accountancy profession -
no consensus 168
- 4b The Wirtschaftsprüferkammer - operationalising the
social accountability of auditors 180

Section 5.2

- 5a A definition of financial accounting;
A definition of management accounting 196
- 5b A comparison of opinions about accountancy:
two managers in ostensibly identical positions in
identical industries in different companies;
A senior finance manager and his superior 199
- 5c The impact of the legal system on industrial
accounting in West Germany 201

Section 5.3

- 5d The West German knowledge process: from accounting
to technical;
The West German knowledge process from technical to
accounting 224
- 5e A cross-national comparison of attitudinal process 225
- 5f The function of accounting: ethos or rhetoric? 229
- 5g The British problematic of attitudinal change 234

Section 6.2

- 6a Capitalist educational philosophy - for whom? 247
- 6b A British triumph of intellect over wisdom? 255
- 6c A German triumph of wisdom over intellect? 259
- 6d Exploding British accountancy fictions 262

Section 6.3

- 6e Controlling business economics in Germany - a
different mentality 277
- 6f The 'control' problematic 287

Section 7.3

7a	New technology - forging the competitive edge	316
7b	Capitalist macro-economic pressures	321

Section 7.4

7c	West German user involvement in the innovation process	332
7d	Cross-national perspectives on technical change - developers and users	337
7e	Technology following structure	341

Section 7.5

7f	A cultural divide: work organisation and new technology	351
----	---	-----

Section 8.2

8a	Technological substitution	368
8b	Guideline: new technology and cross-national non-supervisory work	378

Section 8.3

8c	German hierarchical organisation of work - a cultural heritage	390
8d	British hierarchical organisation of work - a different cultural heritage	395
8e	The unchanged face of British industrial accountancy; The changing face of British industrial accountancy	405

LIST OF TABLES

Notes to Chapter Two

2.1	Percentage Shortage on Complement (Computer Staff)	85
-----	--	----

Section 3.6

3.1	Constituent Respondents of the Research Sample	122
-----	--	-----

Section 5.3

5.1	Organisational Sizes and Nature of Businesses	209
-----	---	-----

5.2	Summary of the Effects of Size and Nature of Industry/ Market on the Work of Industrial Finance Personnel in Both Countries	211
-----	---	-----

5.3	Summary of the Effects on the Work of Finance Personnel of the Function and Autonomy of the West German Business	213
-----	--	-----

5.4	Relative Organisational Operating Autonomy and Reporting Requirements	215
-----	--	-----

5.5	Geographical Research Locations of the Sample Companies	218
-----	--	-----

5.6	Organisation I: Cross-National Comparison of the Functional Responsibilities of the Finance Depart- ments at Operating Sites	221
-----	--	-----

5.7	Organisation VI: Cross-National Comparison of the Functional Responsibilities of the Finance Depart- ments at Operating Sites	227
-----	---	-----

5.8	Organisation VIII: Cross-National Comparison of the Functional Responsibilities of the Finance Depart- ments at Operating Sites	232
-----	---	-----

Section 6.2

6.1	Educational Qualifications of the British Respondents	249
-----	---	-----

6.2	Educational Qualifications of the West German Respondents	249
-----	--	-----

6.3	Work Experience of Finance Managers in Firms' Head Offices in Britain and West Germany	252
-----	---	-----

6.4	Work Tasks of Non-Supervisory Finance Personnel in the West German Firms	257
-----	---	-----

Section 6.3

6.5	Cross-National Comparison of the Work Tasks and Responsibilities of Head Office Financial Accounting Managers	270
-----	---	-----

6.6	Cross-National Comparison of the Work Roles and Responsibilities of Head Office Management Accounting (Control) Managers	271
6.7	Cross-National Comparison of the Work Roles and Responsibilities of Head Office Finance/Commercial Managers/Controllers	272
6.8	Cross-National Comparison of Firms' Computer Departments as Part of Finance Functions	279
<u>Section 7.2</u>		
7.1	British Corporate-Company Relationship in the Process of Technical Change	310
7.2	Cross-National Company Relationship in the Process of Technical Change	311
7.3	Main Features of the Computing Resource of Each Sample Company	312
<u>Section 7.4</u>		
7.4	Stages of Systems Design and Implementation	329
<u>Section 8.3</u>		
8.1	Major Effects of New Technology on the Work of Management Accountants/Controllers	382
8.2	UK Organisation IV: Main Changes in Work Organisation After Systems Implementation	397
8.3	Accountancy Qualifications of British Respondents	407
8.4	Structural/Operational Developments Within the British Companies	411

AN ESSENTIAL QUOTE

"You cannot become an accountant in West Germany by studying for special certificates....the job will show and if you can do it, it's OK. You can tell from the job."

Frau Wanke, West German Organisation VIII

PART ONE

THE FOUNDATIONS OF THE RESEARCH

- CHAPTER ONE REVIEW OF THE EVERYDAY SOCIAL IMPORTANCE OF
THE RESEARCH
- CHAPTER TWO THEORETICAL PERSPECTIVES AND ISSUES
- CHAPTER THREE THE CONCEPTUAL FRAMEWORK AND PROCESS OF THE
RESEARCH

CHAPTER ONE

REVIEW OF THE EVERYDAY SOCIAL IMPORTANCE OF THE RESEARCH

1.1 INTRODUCTION

1.2 SOCIAL COMMENTARIES ON NEW TECHNOLOGY AND THE PROFESSIONS

1.3 SUMMARY AND PRINCIPAL IMPLICATIONS FOR RESEARCH DESIGN

1.1 INTRODUCTION

This chapter provides a brief review of the practical importance of this research insofar as it related directly to significant features of everyday life.

Through the public media we are treated to a daily diet of impressions and opinions concerning the seemingly technology-driven changing nature of work in our society. Unfortunately, commentaries are more often related to marketing hype than dispassionate analysis; political point scoring is a source of confusion in an already confused area. With the advent of microelectronic, and latterly in particular information technology, change is accelerating, happening too rapidly - or it is not happening rapidly enough. Where once Britain led the world in technological innovation, we are now falling behind the pace of contemporary developments. Concern centres on the claim that these new technologies are replacing people and creating unemployment. Yet, this concern is diluted by a counter claim that the development and utilisation of computing technologies also drives the emergence of new knowledge and skills which sustain or increase job opportunities.

More fundamentally, discussions in the public media are often clouded when couched in terms of technology driving events. Perhaps more enlightening would be an exposé of what drives technology.

Nevertheless, the public media are, for most people, the principal sources of information about new technology and, as such, provide a forum for addressing issues felt to be of everyday social importance to organisational employees whose working lives have been or will be affected by technological change. Moreover, discussions of these issues have not been confined to lower level company personnel grades but encompass management hierarchies and the traditionally more elite though heterogeneous occupational stratum commonly labelled 'professional'. This stratum has itself become the subject of considerable media attention not least in respect of the potential contribution which information technology may make towards the monitoring and control of its activities.

The following section 1.2 draws on the non-academic media as a means of demonstrating the everyday social importance of the research documented here. Section 1.3 summarises the important social issues and introduces briefly the major implications for the design of research on the subject.

1.2 SOCIAL COMMENTARIES ON NEW TECHNOLOGY AND THE PROFESSIONS

"Information technology - the convergence of computers and telecommunications - has produced a stream of exciting ways of handling information in all its forms, audio, video, text and graphics. It is changing the way of life in the home and in industry, commerce, education, administration and politics".

(Bird and Huxley 1985)

Computing and information technologies, then, are recognised as being of crucial influence in our changing society, or rather throughout Western industrialised societies, in the light of certain indicators such as the development of networking, increasing software revenue and projected personal computer utilisation (Financial Times Surveys May 1985, April 1985). Whilst new patterns of lifestyle and workstyle are beginning to emerge, it is impossible at present to predict the significant changes which further advances in microelectronic technologies will effect in future years. We may be assured, however, that those changes will be far reaching - as yet microelectronics is an infant industry. The world information technology market in 1984 was estimated to be worth approximately £240 billion and growing at about fifteen per cent annually. By 1990 it is expected to be the world's biggest manufacturing industry. The potential utilisation of computing technologies is enormous.

This seemingly inexorable drive is often regarded as synonymous with 'progress', echoing Saint Simon's concept of industrial society progressing through a series of stages towards an end-

state ordered on the basis of scientific knowledge and rationale. Certainly the necessity of technological progress appears to be an internalised notion: *"it is absolutely ridiculous to try and turn the clock back"* (The Guardian, 11 March 1983).

Emphasising the inevitability of progress, however, tends to divert attention from the role of human agency in the processes of change. Empirical research has found the technological determinist arguments to be fundamentally flawed: technology does not, indeed could not, ipso facto determine social arrangements at the workplace. Whilst the facilities of new technology may make possible and viable hitherto inappropriate forms of work organisation, the manifest character of technical change is unquestionably a matter of social choice. 'Choice' may be regarded as particularly crucial when the issues of employment and unemployment are uppermost in the social consciousness of Western industrialised societies.

The new technology-employment nexus is multi-faceted. For some the new technology-related (sunrise) industries in the West herald a major, or rather the major generator of jobs. Not only for their inherent quota but also, as the argument goes, for every one job in information technology a further twelve are created in middle, low and no-tech industries especially the service and leisure oriented sectors (although estimates of this job creation potential often tend to overlook the labour saving effects of utilising new technology within these sectors, viz Workforce, BBC

Radio 4, 21 April 1987). Moreover, information technology promotes the continued existence of present jobs since it is, claimed to be, the key to competitiveness in all other industries (new technology = higher productivity and lower costs = lower consumer prices = increased product demand).

Conversely, whilst political dialogues constantly invite us to choose between world economic cycles and government policy as the primary cause of today's substantial unemployment, there is undoubtedly a technology factor to be considered. It is impossible to estimate the number of jobs replaced by computer aided manufacturing and administration systems: partly because rationalisation may precede investment in new technology or because change is often incremental thus the real manpower reductions are 'lost' in natural wastage over a period of time. And partly because technological replacement of employees is an emotive and politically sensitive theme which company managements may be disinclined to discuss openly lest it fuels employees' resolve to resist the changes they view as endangering their livelihoods. Nevertheless, immediate competitive pressures notwithstanding, it is not unrealistic to assume that new technology is directly associated with thousands of jobs which simply no longer exist in certain occupational, industrial and commercial sectors. Jobs which, of course, are unlikely ever to exist again, thus not only affecting the groups replaced relatively recently but also those who will never realise the opportunity of being so employed.

The new technology-employment nexus, then, is characterised by a complex series of interrelationships which may be qualitatively different depending on the structural level of organisation taken as the analytical focus and on the peculiarities of dissimilar occupational groups or strata. So, what emerges as the primary concern is not a straightforward creation and disappearance of jobs but bedrock changes in industrial structures and the patterns of employment.

The visibility of this concern, however, may be more a reflection of a better educated and informed community than a result of technical change itself, for, historically, technical changes are not new phenomena as neither are tensions in the processes of change. Whereas in the past, given economic buoyancy and Britain's paramount industrial and commercial position in world trade, the tensions of seasonal or frictional unemployment were relatively easily absorbed. What structural unemployment existed was usually explained in terms of those unable or unwilling to work. But today we witness record structural unemployment together with severe skills shortages. For example, Ferranti Electronics has been unable to attract specialist designers; Marconi (as Plessey and Standard Telephone Cables) need 'several hundred' electronics engineers and has begun to mitigate this deficit by converting humanities graduates into information technologists. There are also insufficient qualified people in systems analysis, programming, software engineering and project management (Business Computing and Communications, September

1986:27). This is the battalion of specialists rising on the wave of information technology development.

Skills shortages outside sunrise industries are less easily explained. One factor has been increased product and service demand which may or may not be stimulated information technology industry activity. In 1984 Jobcentres recorded nearly 12,000 vacancies for engineers and several hundred for skilled technicians (Wilsher and Beresford 1984). Together with the dearth of scientists, the reasons usually given are that individuals with excellent academic qualifications lack the essential practical orientation; that the basic skills need considerable modernisation; that during recent years firms have taken a short term cost-cutting expedient by reducing numbers of apprentices and trainees who would now be part of the skilled labour force. By contrast, for example, in West Germany where firms, aware of long term demographic trends, are 'deliberately maintaining a higher stock of apprentices than will be immediately needed' (Financial Times, 24 July 1986:4).

Between obsolete and new skills lies the largest category affected by technological change: those within existing industries who have had to adapt their skills and embrace new working techniques. Perhaps the most important issue for these groups is whether information technology is associated with the impoverishment of work as were earlier, more rudimentary forms of mechanisation. New technologies though, differ in a most fundamental aspect:

"Just as, in the first industrial revolution, machinery was used to overcome the limitations of the human physique, so in the second industrial revolution, as it has been called, microelectronics will be applied to overcome the limitation of the human brain"

(Milne 1982:102)

Given that microelectronics is capable of replacing human reasoning, information technology might represent a threat to those occupations, previously unaffected by mechanisation, which exercise discretion, judgemental skills and decision making as integral to work performed. In everyday parlance some of these occupations are labelled as 'professional'. This group, however, is hardly a clearly definable, coherent entity. The professions encompass a wide range of dissimilar expertise applied in different ways according to context. Information technology may well have differential effects on occupations within the professional category and, not inconceivably, on different members within the same profession since their sphere of employment extends beyond characteristic establishments such as schools, hospitals, practising firms etc, and penetrates industrial and commercial organisations. Always assuming that the 'professions' really do have some universalistic denominator, the traditional absence of a common professional forum which addresses issues relevant to themselves makes any assessment of the impact of information technology on professional workstyle very difficult.

In contrast, aspects of change often associated with information technology within industry have been documented in government and

independent reports, in specialist and academic literature and through the general media. Additionally, much attention has been paid to extraneous economic and commercial pressures - oil crises, world recessions, inflation, increasingly volatile exchange rates and trading markets, the rising industrial nations - which have contributed to large scale rationalisation and re-structuring within British industry especially since 1979. Having 'woken-up' to the harsh realities, some senior managements revised policies such as centralisation versus de-centralisation and more refined, particularly financial, control mechanisms followed *con gusto*. We have also seen the emergence of a new breed of company chairmen, individuals with few pretensions and a broad streak of pragmatism. Implicitly, if not directly, they eshewed long standing norms and practices and placed more emphasis on competence, delegated responsibility and accountability (Davis 1984, Huxley 1984).

Within industry, the processes of changing policies and attitudes to work appear as yet embryonic but information technology is integral to these processes because, firstly, it facilitates de-centralisation (Gooding 1984a, De Jonquieres 1985). Secondly, it is instrumental in transforming the overall industrial workforce into a smaller, better educated cadre by replacing catagories of skills and duplicate jobs especially at the lower, more routinised level (National Economic Development Office 1985; International Assignment, BBC Radio 4, 11 July 1986 and 18 July 1986). Futher-more, employing organisations are beginning to realise that as software becomes more powerful, users need to become more

versatile and analytically skilful. The profile of university graduate placement substantiates this trend. From the lean years at the beginning of this decade, there has been considerable and increasing improvement in the employment prospects for new graduates. A few progressive firms, however, may be looking more closely at the personal characteristics of candidates. Information technology facilities and the nature of today's business environment puts a premium on aspects such as creativity, pragmatism and flexibility (Dixon 1984, Gooding 1984b).

On the other hand, one of the socially recognised hallmarks of a 'professional' is specialist knowledge and skills which, in today's business milieu, might be construed as a limiting factor in terms of developing the increasingly important aspects of attitudinal flexibility and cognitive adaptability. Thus whilst a well educated and trained professional might ostensibly appear somewhat advantageously placed in the labour market, this label may no longer carry the irrefutable job guarantee associated with a previous industrial generation. These imponderables stimulate uncertainties not only about the continued suitability of specialist professional training in certain contexts but also ultimately of the institutionalised status of such occupations.

This institutionalised status is, anyway, under attack or at least is being fundamentally questioned by forces other than technological change. There has been, for example, severe criticism of and de-regulation of the Stock Exchange (the so-called Big Bang)

and other financial services operating within the Square Mile, beyond which a financial services revolution is compelling all the principal actors - insurance companies, merchant and clearing banks, building societies etc - to enter the competitive fray (Financial Times Survey October 1985 and 1986). Then, cajoled by the Office of Fair Trading, 1 October 1984 was 'A' Day when for the first time lawyers and accountants advertised in the press and on the radio. The clear emphasis of these and other advertisements was not so much the hard sell on specialist services as drawing the consumer's attention to the broad range of services available under one roof - *"we want to stress our versatility"* (Paul Orchard Lyle senior vice president of the Royal Institute of Chartered Surveyors quoted in Barber 1984).

Pressures to change the 'professional' image derive from a number of sources. For example, continuing decline in fee income from audits by large firms of accounting practitioners has encouraged frantic diversification into non-audit activities and is changing the public's perception of the profession (Hogan 1984).

Changing the image of the professions however, is not synonymous with altering the mechanisms by which the professions maintain exclusivity in certain areas of work performance. But here also changes are likely, for instance, the sole rights of opticians to supply and sell spectacles is under scrutiny and in 1982 a second reading of Austin Mitchell's Private Members Bill to remove the solicitors' property conveyancing monopoly was unopposed in the

House of Commons. This latter monopoly was finally dismantled on 11 May 1987.

In addition to the groundswell of public opinion that professionals must be more sensitive to the needs and demands of the consumer, the self-professed competence of practitioners has never before been so frequently contested. The series of recent (often multi-million pound) litigation cases against doctors and especially accountants mainly for negligence in auditing procedures do not need to be listed here to illustrate the point. In fact such is the increasing risk factor in auditing that the cost of practising firms' insurance premiums escalated by between 200-500 per cent during 1983-85 (Hellier 1985). During 1987 as the Director of Public Prosecutions sifts the evidence, the exposé of the Guinness share dealing scandals has led to a stream of resignations from that company and from City institutions.

These events are symptomatic of an increasingly critical appraisal of the institutionalised status of the professions and of the premises upon which that status has developed. Whether this criticism overflows into the industrial arena significantly enough to effect professionals' employment situations is a matter for investigation. Neither is this a singularly British phenomenon, it extends to the United States and to countries belonging to the Organisation for Economic Co-operation and Development (OECD) where *"it is hard not to conclude that professions are vehicles of*

privilege bringing undesirable rigidities and restrictions"
(Prowse 1985).

Research conducted and reports published by bodies such as the OECD provide a source of comparative information on a cross-national basis. However, anyone who lives and works in continental Europe is immediately confronted by the high level of awareness and knowledge possessed by the indigenous population of conditions beyond their national boundaries. As this decade unfolds, British media appear to be subscribing increasingly to a comparative international viewpoint. This may be encouraged by intensified anxiety concerning domestic conditions (education and training, youth unemployment, balance of trade deficits etc) but there remains a sense in which these comparisons are topical rather than a consistent and inherent theme flowing from a recognition of the learning potential of a cross-national perspective. How, for example, are other countries dealing with common economic problems? To what extent do these common problems arise from the same sources? Or why certain social problems (football hooliganism, racial tensions, overcrowded prisons, for instance) do not appear as disruptive throughout all European countries? Are we in Britain sufficiently aware of our EEC neighbours? What can we learn from their policies, perhaps even their mistakes?

It was the general lack of information, an inherent interest in and commitment to the value of a cross-national perspective which informed the research documented here.

1.3 SUMMARY AND PRINCIPAL RESEARCH IMPLICATIONS

British public media reports suggest that future utilisation of computing technologies in Britain and throughout Western Europe is potentially enormous, although cross-national comparisons do not appear to represent an inherent and ongoing theme in such reports. Thus, research utilising a cross-national perspective of technical change offers (a) the potential to extend understanding of the ways in which computer technology may be affecting work organisation; (b) the potential to extend understanding of the reasons for such effects since between different countries these effects may or may not be the same.

Social commentaries on the societal effects of technical change tend to be confusing. On the one hand it is associated with high and increasing unemployment, itself a burgeoning issue in the Western industrialised community. On the other hand technical change is heralded as a key to the creation of new jobs. Although since these latter are substantively different to jobs which no longer exist (say, software engineers as opposed to dockyard stevedores), new technology may be instrumental in changing bedrock structures of employment and industry.

A further complication is that between obsolete and new jobs there exists the working community perhaps most affected, those in established industries whose jobs have changed following adaption to new computerised working techniques. Research which focuses on

this working community offers a number of potential advantages. Firstly, some light may be shed on the related types of jobs or occupations which have been created or become obsolete as a possible 'knock-on' effect rather than those immediately connected with sunrise industries. Secondly, there is an opportunity to investigate the processes of technical change on existing job classifications and thus to address the important issue of deskilling so prevalent in earlier studies of more rudimentary forms of mechanisation.

Taking these two points together in the context of British industry, which in recent years has certainly experienced a great deal of pressure to maintain competitiveness in world markets, also creates the possibility of constructing a composite picture of the nature of and reasons for structural changes in employment and industry. Although here it will be necessary to suspend the concept of technological determinism if, as previous research suggests, human agency is a crucial factor influencing that nature of technical change.

On the other hand, neither can the physical characteristics of new technology be entirely dismissed since one vital, and distinguishing, ingredient of microelectronics has been posited as the ability to replace human reasoning. Moreover, social commentaries emphasise the necessity for attitudinal flexibility and cognitive versatility as computer software becomes ever more sophisticated. In these respects whereas mechanisation was of

little or no consequence, new technology might represent a threat to occupations where human reasoning is integral to specialist work performed. In everyday parlance and certain academic traditions, many of these occupations in Britain are labelled as 'professional'. There are, then, possibilities associated with new technology, such as the deskilling of professional work, which did not arise with earlier forms of technical change. Research could usefully investigate these possibilities.

Moreover, these possibilities arise at a time when there appears to be considerable critical appraisal of and public disenchantment with the professions both in Britain and in the rest of Western Europe. These criticisms tend to focus on the practising sector but could conceivably spill over into industry where so-called professionals monopolise certain areas of work activity. Thus, focusing research on industrial professionals would enable not only an assessment of the effects of new technology on work organisation but also whether these effects are integral to a sustained attack on the autonomy and other privileged characteristics of professional workstyle.

The British professions, however, hardly constitute an homogenous entity. Even within industry the effects of technical change are likely to differ between professions depending on, for example, the type of work executed or the degree of political power exercised by certain professions in the decision making processes underlying technical change. There may also be differences

emanating from the nature of the organisation and operation of particular professions, for example, whether a knowledge of new technology is a requisite of professional certification and how far this is recognised within the industrial community. Moreover, the effects of new technology on work organisation may differ between members of the same profession according, say, to position in the organisational hierarchy. Clearly, it is not possible to embrace all professions within one research project but, in view of the similar trends throughout Europe, concentration on one profession is both viable and increases the appeal of cross-national comparative research as a means of clarifying the British context.

Although previous empirical work in this specific area is scant, many issues surrounding technical change and the institutionalised status of the professions are reflected in existing bodies of academic literature. Here, however, virtually no account has been taken of the 'cultural' context which may differ between different nations. Notwithstanding the difficulties of defining 'culture' (discussed in the next chapter), one school of thought argues that unless all analyses, of for example, organisations, institutions and processes, depart from a fundamental point which recognises the pre-existing influence of culture, these analyses are bound to be partial. The cultural context may influence not only forms of organisation, institutional mechanisms and the character of processes but also underlying intangibles such as norms, values and meanings. These intangibles are particularly relevant if

certain meanings such as that ascribed to the label 'profession' cannot be directly translated across national or language boundaries: or, as previous research suggests, human agency in the processes of technical change cannot be ignored.

These factors militate against statistical survey methodologies which must rely on commonly understood linguistic terms and cannot apprehend the subtle influences of intangibles such as behavioural norms or the intricacies of human aspirations and motivations in politically sensitive situations.

Two major implications for research design arise from this conceptual posture. Firstly, to evaluate the influences of human agency and other possible nationally specific elements in the processes of technical change, an in-depth method which elicits rich, qualitative data is required. Secondly, the selection of nations, economic organisations, locations and respondents must conform to a systematic protocol, certain cross-national parallels or consistencies, in order to retain the integrity of the comparative dimension.

CHAPTER TWO

THEORETICAL PERSPECTIVES AND ISSUES

- 2.1 INTRODUCTION
- 2.2 CULTURE - THEORETICAL PROBLEMATIC AND RESEARCH IMPLICATIONS
- 2.3 THE PROFESSIONS - THEORETICAL PROBLEMATIC AND RESEARCH IMPLICATIONS
- 2.4 TECHNICAL CHANGE - THEORETICAL PROBLEMATIC AND RESEARCH IMPLICATIONS
- 2.5 SYNOPSIS OF THEORETICAL ISSUES TO BE ADDRESSED
- 2.6 SUMMARY

2.1 INTRODUCTION

The previous chapter outlined the everyday concerns and debates surrounding the increasing utilisation of microelectronic technology in social life. This chapter directs the discussion to a deeper theoretical level and more specifically outlines the issues associated with new technology and professional work organisation. Sections 2.2, 2.3 and 2.4 highlight the theoretical problematic in areas of culture, the professions and technical change respectively.

Section 2.2 examines the concept of culture and argues that, once made intelligible, the utility of such a concept lies in its ontological capacity, through the instrument of cross-national research, to explain social events and expose empirically the theoretical inadequacies of current positions on the professions and technical change.

Sections 2.3 and 2.4 catalogue the historical development of macro analytical frameworks applied to the professions and technical change. These frameworks, it is suggested, all contribute to understanding yet all fail to satisfactorily accommodate the possible influence of differing structures and processes between countries ostensibly manifesting a similar basic socio-economic form. In Section 2.5 the theoretical issues to be addressed by the research are outlined.

2.2 CULTURE - THEORETICAL PROBLEMATIC AND RESEARCH
IMPLICATIONS

"The isolation of the societal effect" (Brossard and Maurice 1976:30) is unquestionably problematic. National and cultural boundaries do not necessarily coincide. 'Culture' itself is an abstract concept, often ill-defined and *"made to stand for many unspecified influences"* (Ajiferuke and Boddewyn 1970:161). Jamieson (1982-1983:77) views the present problem as,

"a situation in which nobody is questioning the existence of differences among cultures but nobody has satisfactorily evolved a method for dealing with the potentially useful concepts of culture and national character".

The way forward, Jamieson contends, is to compare aspects of capitalist societies since,

"such economies have a clear logic in the sense that the system does set up certain pressures in the social system to move in one direction rather than another".

(p93)

Such a methodology compels an anchor concept of culture which is flexible enough to accommodate institutional and individualistic phenomena without insisting that 'culture' is the sole determinant of forms of organisation, operation, social action or attitudinal prerogatives. Kroeber and Parsons (1958:553) have developed such a concept, culture is the,

"transmitted and created content and patterns of values, ideas and other symbolic-meaningful systems in the shaping of human behaviour and the artifacts produced through behaviour".

Thus, culture may be conceptualised as both a normative and evaluative influence; represented both institutionally and attitudinally; and, as Ajiferke and Boddwyn (1970) have observed, complex and multi-dimensional exhibiting both continuity and change.

Progress from conceptualisation to theoretical generation is, however, characterised by a fundamental dichotomy. Two major theoretical perspectives elevate the importance of extra-cultural or trans-national influences. Briefly, the critical (or critical political economy - Child and Tayeb 1982-1983) approach concentrates on the forces stemming from macro socio-economic and political forms of organisation. In capitalist societies the profile of capital ownership and location within what is often called a laissez-faire market system may exert common trans-national influences (Clegg and Dunkerly 1980), reflected particularly in,

- (1) the degree of internal decentralisation of organisation planning, decision making and control vis a vis the prominent role of the State apparatus in socialist countries (Kuc et al 1981);

- (ii) the focal objectives of management and organisational decision makers, that is, profit maximisation, company growth and market power (Baran and Sweezy 1966);
- (iii) the continuing pressure to decrease costs and tighten control of the labour process (Braverman 1974, Poulantzas 1975, Littler 1982).

Secondly, arguments from the contingency perspective originate from the 'logic of industrialisation' thesis (Harbison and Myers 1959, Kerr et al 1973). Irrespective of cultural settings, inherent in the process of industrialisation are imperatives which all societies must observe and embrace so as to capitalise on the potential benefits of industrialism: convergence also, even of societies fundamentally ideologically and politically disparate, becomes a possible scenario. Concomitantly, to ensure satisfactory levels of cost effectiveness and performance, organisational development is contingent upon industrial expediency. Within this theoretical framework, the major determinants of organisation design and operation are, (i) three basic stages of strategic development (Chandler 1962, Scott 1970); (ii) technology (for example Blauner 1964, Woodward 1965); (iii) a complex set of contextual variables principally size, technology, environment and the degree of internal/external interdependence (Hickson et al 1974 and 1979).

The essential conclusion of these two perspectives is that certain organisational processes - structural development, policy and decision making, management and employment practices etc - are seen to evolve, continue and be manifested as resultants of forces largely independent of cultural variables. These latter are only of peripheral influence.

By contrast, an increasing number of cross-national studies have found significant inter-national differences in organisational processes. There are two principal foci of investigation within what may be termed the 'cultural' perspective. Firstly, culture may be conceptualised as cognitive systems (viz, Goodenough 1961) or structural systems in the tradition of Lévi-Strauss or Parsonian symbolic systems (for example, Geertz 1973). Keesing (1974) has termed these collectively as 'ideational' theories. Ideational methodology concentrates on exposing underlying characteristic shared values, symbols, beliefs, opinions etc, on a considerable range of issues - for example Hofstede (1976, 1977a, 1977b, 1978, 1979, 1980).

The second focus addresses the structural forms of institutions and organisations as historical and current expressions of cultural transmission. Proponents of the 'institutional' approach (Child and Tayeb 1982-1983) include, for example, Maurice (1976), Brossard and Maurice (1976), Maurice et al (1979 and 1980), Sorge (1978 and 1980). The increasing sophistication and rigour of more recent cross-national research design (viz, Ahiauzu 1981, Kelly

and Worthley 1981) has lent considerable support to the general conclusion that , at least, certain features of institutional and organisational processes and their existent inter-connections are influenced primarily by the cultural context. For instance, nationally specific education systems and their respective relationships to organisation structures, employment policies, reward systems and control mechanisms (Lutz 1981).

Sorge (1980:3) however, further contends that *"the separate definition of cultural, contingency or political economy variables is futile"* since culture pre-exists the operationalisation of these variables.

"Culture comes into an organisation as an artful, unself-conscious experimentation with alternatives in business policy, finance, work organisation, industrial relations, education and training and many other factors."

Therefore,

"there can be no culture-free context of organisation."
(Sorge 1980:23)

Sorge's position implicitly suggests that all intra-national phenomena are culturally separable, isolated from external forces such as expediencies pertinent to industrialism or the profile of capital ownership: and thus, that a cultural entity can be ontologically and locationally defined. There is an embryonic yet growing body of cross-national organisation, management and

occupational literature which increasingly suggests culturally related differences in organisation structures, management philosophies and work/employment practices between countries of Western Europe, the United States and the Far East. The increasing attention given to cross-national institutional comparisons (especially respective education systems, Merrit 1985; Panorama, BBC 1, 2 June 1986) and the significance of cross-national industrial research findings (Lawrence 1980 and 1986, Mant 1977 and 1983, Fores and Glover 1978, Sorge 1979, Warner 1984a and 1984b, Bessant and Grunt 1985, Glover and Martin 1986) has been fuelled by concern about Britain's declining manufacturing base and economic prosperity. Thus far, however, strands of cross-national research have concentrated on managerial and/or technical industrial occupations, to some neglect of administrative functions and their wider institutional circumstances.

Contrastingly, cross-national organisation studies, have yielded some evidence of the influence of common contingency factors (for example Lammers 1978, Lammers and Hickson 1979). And in empirical work employing multi-variate statistical analysis designed to isolate cultural variables, both organisational similarities and differences across nations have been revealed (for example Child 1981, Child and Kieser 1977 and 1979, Budde et al 1982).

There is, however, an inherent problematic in the utilisation of survey methodology and statistical analyses in cross-national research. These methods may assume that universal meanings apply

to the requisite terminology of questionnaires and, thus, that meanings are directly transferrable across national boundaries. Given the conceptual problematic associated with 'culture' and the limited extent to which the phenomenon has been explored in cross-national institutional and attitudinal settings, the grounds for assuming consistent meanings across national boundaries have hardly been reliably established. On the contrary, the position taken here is that such an assumption may invalidate research findings. In order to investigate whether meanings - of gestures, words, events, social action and structural form - are nationally and culturally specific and, therefore, of crucial importance to understanding cross-national differences in work organisation, research must depart from a point which does not assume shared meanings across national boundaries. There follows a major implication for the conceptual framework of the research insofar as underlying meanings become a primary research subject.

A further consideration is the possibility that meanings, as attitudinal, organisational and institutional phenomena, may be subject to both intra-national differences and change over time. For example, certain attitudes or opinions may be peculiar to atypical family and educational circumstances; certain behaviours may be adopted according to accepted norms in particular organisations, occupational groups or geographical regions within national boundaries. And all may be exposed to temporal changes on a structural level. Thus, whilst on the one hand, the investigation of underlying meanings implies a subjectivist

orientation in research methodology: on the other hand, research strategy and design are required to accommodate the exposure of differences and changes which are not nationally or culturally specific.

If, at the outset, one is prepared to accept as credible Jamieson's (1982-1983) suggestion for the evolution of a cross-national research method, then subject countries will be comparatively capitalist in structural socio-economic and political form. From this basis, the assimilation of intra-national differences together with the exposure of national and cultural disparities demands a research strategy and design which replicates the same study in each subject country. That is, as far as the possible the topic of investigation, the sample population and the parameters of selection remain identical.

Embracing the issue of temporal change is, of course, problematic in research which is cross-sectional (at a point in time) rather than longitudinal. One means of circumventing, or at least addressing, this difficulty is to elevate the issue of temporal change to the status of a research topic. 'Change', therefore, becomes an integrated focus in an investigation which, firstly, does not proceed upon an assumption that meanings are directly transferable across national boundaries: and secondly, appreciates that cultural specificity may manifest in both institutional and ideational forms. The latter necessitates a structural analysis of, say, the organisation and operation of major societal systems

and their interrelationships: the former requires a subjectivist methodology which will expose any specificity of meanings and a sample population selected against the same criteria in each subject country.

As was noted earlier, cross-national research to date has focused on (industrial) organisational form and the managerial environment. Anxious observers of Britain's education system have recently initiated a flurry of cross-national research activity: yet, with the possible exception of the engineering occupation, the wider relationships between institutional, occupational and organisational processes within a cross-national context of change remain largely uninvestigated. It was these large gaps in understanding and knowledge which influenced the refinement of the integrated focii of this research to include what is recognised in Britain as institutionalised professional occupational organisation.

2.3 THE PROFESSIONS - THEORETICAL PROBLEMATIC AND RESEARCH IMPLICATIONS

There is a long history of academic interest in the analysis of the professions (as a specific occupational classification), of professionalism (as a mode of occupational practice and operation) and professionalisation (as a process of organising vocational knowledge, acquiring the occupational classification and establishing mechanisms which initiate and maintain exclusivity in defined areas of work). And fundamentally different analytical perspectives have been developed. Despite this effort, there remains some confusion about the definitive characteristics of a professional occupation and the justification for model definitions (Friedson 1979).

Orthodox, often functionally oriented, analytical approaches were evidently less concerned with exposing the societal interfaces of professional work organisation than isolating attributes peculiar to professional vis a vis other occupational categories (Klegon 1978). From a review of various taxonomies, Millerson (1964) concluded that the six most frequently mentioned traits of professionalism were (a) altruistic service; (b) the existence of a professional body which (c) may or may not provide education and training and (d) test member competence; (e) an obligatory adherence to an ethical code which governs working practices; and (f) skills based on theoretical or abstract knowledge. This taxonomic paradigm retained a certain popularity (for example

Greenwood 1957, Gross 1958, Kornhauser 1962, Barber 1963, Carr-Sanders and Wilson 1964, Vollmer and Mills 1966) and little contention seemed to exist regarding the 'core' or 'essential' occupational characteristics of the professions. Where any ambiguities were observed they were either functionally differentiated (Parsons 1954), cast to the 'fringes' of professional work organisation (Parsons 1968) or conceptualised in terms of a possible 'scale' of professionalism (Moore 1970).

Reliance on a unitary professional model also led to an extension of occupational distinctiveness into social distinctiveness where professional work activity was seen to operate as an integrated set of social relationships providing a shared value system and sense of common identity for members: the professions constituted 'a community within a community' (Goode 1957, also Abrahamson 1957), displaying habits of mind distinct from other forms of 'craft consciousness' (Bensfield and Lilienfield 1973).

Since the professional occupational model assumed consensus, social identity and adherence to occupationally defined norms of practice, the existence of 'bureaucratic-professional conflict' was also largely assumed as inevitable. Research which failed to expose tensions between professional and administrative forms of work organisation were explained in terms of particularistic organisation contexts (Scott 1965, Hall 1968) or varying 'accommodation procedures' (Kornhauser 1962, Calvert 1967, Vollmer and Mills 1966, Benson 1973). Nevertheless, having exposed

generally harmonious working relationships between professionals and management, analysts questioned more closely the supposed underlying differences in values of actors and the importance and nature of career orientation. The evidence suggested that many professionals comfortably accepted managerial values, goals and control systems and that interests coincided since professional career aspirations often included a future management role (Gouldner and Ritti 1966 and 1967, Schriesheim et al 1977, Powell 1984, Child 1986a).

The professional model retains its patrons. Hall (1975:80) argued that it *"provides the imagery that occupations aspiring to professionalism observe in their attempts to gain recognition"*. This imagery was translated by Roth (1974) as an uncritical acceptance of the professionals' own claims and idealised public conceptions: in effect the 'sociologists decoy' and over time the taxonomic position has been subject to theoretical critiques. Alongside what was arguably a theoretical and methodological revolution in sociology in the mid 1960s (Mennel 1974, Giddens 1976), influential perspectives emerged. Hughes (1958, 1963 and 1971) employing sociological concepts from both Marx and Weber, developed a line of reasoning which drew attention to the professional system of licensing competence and its 'fictional components': principally, the basis of the professional mandate, that is, flowing from trust, the exclusive claim to esoteric knowledge and specialised skill and the historical appropriation of the 'title' profession as a mechanism for achieving

occupational middle class dignity (also Reader 1967) - what Elliot (1972) has since referred to as 'status professionalism'.

'Profession' has, thus, become conceptualised as a politically advantageous 'honorific label' (Becker 1971) which, although similar occupations developed in all industrialising nations, was not routinely employed in Western Europe (Hughes 1971, Johnson 1972, Freidson 1979) and has no comparative linguistic representation today (Fores and Glover 1978, Child et al 1983). Recognition of the political implications of professionalism have, however, generally ignored cultural differences and temporal changes in the meanings attached to this occupational label, concentrating instead on the development of new concepts.

Johnson (1972:37) criticised orthodox analysis as,

"theoretically confusing concepts of professional activity with institutionalised forms of control of activity" [emphasis added].

He defined three institutionalised 'orders' of control reflecting a threefold typology of contextually differentiated professional-client relationship - patronage, collegiate, mediative - emanating from the 'core' of uncertainty conditioned largely by the degree of inaccessibility of professional knowledge to the client. Professional mystification of knowledge and ability to retain and/or expand its boundaries lies at the base of professional autonomy and power potentialities.

Johnson's focus on professional strategies emanating from political power spawned the development of the influential 'critical' perspective. Drawing, in a highly sophisticated manner, from Marx's theory of social class, the myths of altruism, impartiality and ethical veracity are exposed as legitimations of professional monopoly of knowledge and autonomy which shares its roots with the dominant ideology of capitalist society (Heraud 1973, McKinley 1973, Gyarmati 1975). The twin focus of concern lies in the *"inherently political nature of internal professional activity itself"* and *"the significance of professionalism and professional employment for the wider issue of the location and exercise of political and economic power in society as a whole"* (Esland 1976:17, emphasis added). Thus professional self regulation is inherently harnessed to the inequitable distribution of political power and authority characteristic of class-divided capitalist society.

Critical analysts however, point to two opposing trends. On the one hand, professionals have gained access to the institutions of power (Abel 1979): they are seen to be sustaining the structure of capitalist domination through having become 'servants of power' (Baritz 1960, Perrucci 1971) and by performing the 'global functions of capital' (Carchedi 1975). That is, they are part of the 'surplus value producing process'. In this respect and because their social and educational backgrounds are increasingly similar, professionals are being absorbed into the managerial class (Ehrenreich and Ehrenreich 1977, Derber and Schwartz 1980).

On the other hand, professional practitioners are increasingly employed by the State and large business corporations which are usurping professional authority by the imposition of managerially defined organisational goals (McKinley 1979) and direct control mechanisms (cf Friedman 1977a). The nature of their implicit employment contract might then be described as progressively less diffuse and more restricted (cf Fox 1974a). The increasing separation of the conception from execution of professional tasks (cf Braverman 1974, Marx 1976) has attenuated professional autonomy: this amounts to a 'crisis' following the rise of occupational professionalism (Elliot 1972) which critical analysts have termed 'proletarianization' or 'deprofessionalisation' (Aronowitz 1973, Oppenheimer 1973 and 1975, Gorz 1976, Johnson 1976 and 1977a, Larson 1980).

Although of considerable import, there are several ontological difficulties with this paradigm. Firstly, there seems to be inadequate evaluation of the concept of profession. Apparently professionals are defined according to their hierarchical positioning in a pre-existing power structure when their relationship to the productive process is dichotomising. If indeed this relationship is dichotomising, then there is a theoretical inconsistency in analysing the professions as an homogenous entity occupying a characteristic position of power and privilege in class-divided capitalist society. Yet when this latter tenet is maintained, it becomes axiomatic that 'deprofessionalisation' is a difficult theme to embrace. In

critical reviews of proletarianisation there is a tendency to obscure the point at which a professional ceases to perform the global functions of capital and becomes part of the labour process and vice versa. What exactly constitutes the definitive parameters remains problematic, the more so when due consideration is given to strata of personal service professionals, some of whom retain high levels of social status and economic reward but some of whom do not: and all perform the global functions of capital only in a very indirect sense of making a contribution to the maintenance and reproduction of capitalist economic relations.

Moreover, Johnson's (1976, 1977a and 1977b) analyses of industrial accountants has prompted awareness of possible horizontal cleavages within professional sectors spawned by the ability of elites to maintain the indeterminacy of professional knowledge where nominal colleagues remain outside the club. And Armstrong's (1984) concern has been to document the nature of competition between organisational professionals. All of which strongly suggests the need to apprehend the ambiguities of professionals in organisational positions and to appreciate the heterogeneity between and within specialised areas of independent professional work activity (Fielding and Portwood 1980). As Turner and Hodge (1970) have contended, the 'macro-stratification assumptions' underlying the class approach to the analyses of occupations dissolve what is distinctive about occupations and the productive labour they entail.

Secondly, there are qualitative differences attached to the meaning of profession, temporally and not only cross-culturally (Johnson 1972) but also intra-nationally and even between members of the same profession (Wilenski 1964, Harlow 1973, Strauss 1975, Fores and Glover 1978, Child and Fulk 1982). As Prandy's study has attested, these meanings embrace certain values for those who hold them and with whom they interact. There is then, a necessity for theoretical sensitivity towards the subtleties of mechanisms, meanings and underlying values within an overall objective of fuller understanding of professional work organisation.

Finally, the critical approach concentrates attention on power relationships and political processes in capitalist society, arguably with the implicit assumption that within alternative forms of socio-economic organisation, professional practitioners would occupy dissimilar positions and play out different social roles in a different manner. It is not within the scope of this thesis to contest this assumption, suffice it to say that other observers have done so (Ben-David 1964, Freidson 1977).

The critical perspective does, however, draw attention to the possible relationships between professional work activity and the deeper structures of society: neither has it entirely ignored, though perhaps not satisfactorily explored, the potentialities of changing work organisation. A more general recognition of change has probably been most closely appraised theoretically in what Klegon (1978) has called the 'processual' approach. Here the

professions lose their essential collective or dichotomising quality to become "loose amalgamations of segments pursuing different objectives in different manners and more or less delicately held together under a common name at a particular period in history" (Strauss 1975:10, emphasis added). The focus here lies in the dynamics of professionalisation and the 'different manners' which were occupational attributes in taxonomic analysis now become elements of strategies for, say, achieving upward social mobility (Haug and Sussman 1973, Parry and Parry 1977) or maintaining occupational control over work activity (Child and Fulk 1982).

There is also a recognition of the Janus-faced character of professional strategies in that not only do they constitute internal mechanisms for controlling "who enters the work, how they are trained, how they perform work tasks and how this performance is checked and evaluated" (Watson 1980:176): but also act as external legitimations of the exclusive right to do particular types of work in a particular occupationally defined way, in effect, the control of the relevant labour market segments (Freidson 1977). There is thus, an exposure of the interface between occupational identity and ideology and wider socio-economic and political conditions. It follows then, as Klegon (1978) points out, that studies of professional organisation, operation and control need to be related to processes, other institutional mechanisms and arrangements of power in wider society.

However, as with previous perspectives, what the processual approach does not do and is therefore of limited theoretical applicability, is underline the importance of analysing the professions within a particular society, since it must surely be argued that the working practices of professional occupations are woven into the fabric of the society in which they operate. As are all a *"society's arrangements for ordering economic life"* (Jamieson 1982-1983:72). The effect of change on particular societal members may be influenced more by pre-existing arrangements than underlying motives.

Western society has been judged to be in a period of increasing derationalisation, debureaucratisation and deprofessionalisation (Haug 1975, Ritzer 1977). Arguably, part of this process stems from increasing public distrust of professional goodwill and competence though Toren (1975) also envisages a decreasing role for the professions influenced principally by their 'cultural elements'. For example, the service ideal which may become outmoded or the knowledge base which may become more accessible in contemporary society. Jamous and Peliolle (1970) have distinguished between technical (codifiable) and indeterminate (esoteric) aspects of professional knowledge and further illustrated how the knowledge base can be shaped so as to serve the needs of practitioners (also Elliot 1973).

The vexed question of professional knowledge is of central importance at a time of rapid social change and when progressively

sophisticated micro electronic technology has the potential to change traditionally entrenched forms of work organisation. The technicity/indeterminacy distinction of professional knowledge indicates the potential for control over professional work especially if new bases of indeterminacy do not develop. For example, the technical aspects of professional knowledge may be codified in computer software thus enabling the routinisation of professional work or, perhaps, the execution of previously professional work activities by a less auspicious strata of para-professionals. This, in turn, invites the possibility of the creation of a dual labour market (cf Doeringer and Piore 1971) within a profession.

Further, computerisation may represent a more fundamental threat to the power and autonomy of the professions since, as Johnson (1972) argues, this is sustained not by the essence of knowledge itself but by professional mystification of knowledge. Thus if information technology proves to be instrumental in the process of demystification, increasingly widespread utilisation of new technology may be tantamount to an erosion of professional power since it weakens the monopoly of specialised knowledge and diminishes autonomy (viz Haug and Sussman 1969, Lansberger 1978, Child and Schriesheim 1979, Child and Fulk 1982, Child 1986b). In effect, although occupations in future will possess specific expertise any attendant claims to indeterminacy, autonomy, authority, status and privilege will have eroded to such an extent that the title 'profession' will be obsolete (Haug 1977).

This scenario, however, is complicated by other interfaces of professional work organisation. Considering potential outcomes of technical change also requires an *"attempt to understand professional occupations in terms of their power relations in society - their sources of power and the ways in which they use them"* (Johnson 1972:18). Yet Marxist perspectives appear to offer only a passing recognition of change contingent upon the fall from power of some professional actors - those 'proletarianised' or 'deprofessionalised'. Generally unsatisfactory explanations of this event may reflect the theoretical problematic of grasping heterogeneity between and within the professions and the ambiguity that attaches to professional power in different contexts.

The processual approach recognises these variabilities, the spectre of change, the inherent professional capacity for initiative action to control work organisation in changing circumstances and that analyses of the professions cannot be dissociated from the fabric of society's socio-economic and political arrangements. But, as with other perspectives, it stops short of explaining what is distinctive about the British situation and why this is so. This can only realistically be done by apprehending aspects of change in a comparative study of the professions which is sensitive to heterogeneity, and nationally contextualised. Although research interest in new technology and work organisation is gathering apace, as the previous section suggested, the nationally-specific or cultural context has largely been neglected.

2.4 TECHNICAL CHANGE - THEORETICAL PROBLEMATIC AND RESEARCH IMPLICATIONS

Assumptions of a society's natural tendency towards progress and the neutrality of technology underpin earlier theories of industrialisation (Kerr et al 1973). Uncritically accepting these assumptions, theorists of the economic-rational school identified the motivation for technical change as corporate survival in a competitive trading environment (for example, Norris and Vaisey 1973). Emphasis on the economic dimension, however, deflected consideration of differential motivations, the role of social choice (Watson 1980) and the possibility of technological alternatives (viz, Quinn 1980).

At the level of macro-theorising, these issues have been mooted within Marxist analyses which exploded the 'myths' of progressiveness and technological neutrality as legitimations of the capitalist social order (Hales 1974). Technological development and the unbenign nature of its applications stem from the necessity of capital to maintain or extend control over the labour process (Braverman 1974). Institutionally, social choice is the prerogative of capital, though it may be contested by labour through nonconformist means such as resistance or informal technical systems modification (for example, Larson 1980).

Many of the empirical studies which demonstrated deskilling and the dehumanisation of work as an evident concomitant of mechanised

modes of production, seemed to lend credence to Marxist analyses of technical change: especially since research, such as that conducted by the socio-technical systems school, showed empirically that viable alternative, and less demoralising, forms of work organisation around new technologies were possible.

Nowadays, there is wide acknowledgement within social science of the non-neutrality of technological development and application: the exercise and outcomes of social choice has become a paramount concern. The Marxist paradigm is, however, open to a number of questions. Since the nature of technical change is harnessed to the socio-economic order, there has been an assertion that technical change is always conducted in the same way in similarly capitalist countries. Between these countries no allowance is made for the existence of differing values, institutions, structures and mechanisms which may affect the way in which technical change is conceived and implemented in the workplace. Relatedly, there is an implicit assumption that social choice surrounding technical change is conducted in different manners in non-capitalist countries (cf Grootings 1986). Were robust comparative research findings available, this may be found not to be the case.

The pre-eminent concern with social choice seems to have been grossly distanced from the nature of particular technologies appearing at different stages in the continuing process of industrial change. Conceding the non-neutrality of technology

does not mean that the nature of any particular technology can be dismissed as having no bearing on the boundaries of work organisation possibilities accompanying its implementation. New technologies manifesting novel characteristics are likely to change the parameters of social choice. For instance, it is possible that, at least some, microelectronic technologies could not be, or only very inefficiently, implemented in such a way as to deskill or dehumanise work. Conversely, Marxist analyses might be supported if the same technology in different capitalist countries and/or organisations was to found to have differential effects on the quality of working life according to employees' position in the productive process.

Whilst research findings addressing microelectronic technology have only relatively recently become available and clearly more empirical study is required to unravel the complexities of ongoing technical change, there has been a long standing concern focusing on the relationship between technological development and the macro structures of industry and employment, particularly the automation-unemployment nexus (Pollock 1957, Stieber 1966, Rothwell and Zegeld 1979). Although there is published evidence of job displacement (for example, Cooley 1981), it is not clear which industries or employees are most affected, how far the knock-on effects of job displacement spread or whether rising unemployment is solely due to technical change. Equally probable, for instance, could be firms' failure to invest sufficiently in

research and development and new production facilities (Swords-Isherwood and Senker 1980).

Further, the Council for Science and Society (1981) has indicated the possible co-existence of two trends: one essentially short term aimed at replacing labour by technology in order to minimise cost and maximise control. The other emerges where long term advantages are seen in the form of elevating the skills and knowledge stocks of the workforce, thus enhancing adaptive capacity and flexibility. The possibility exists that, with training, new conceptual and judgemental skills will be engrafted onto traditional job classifications. But perhaps a poignant question is whether this will be a universal phenomenon at the macro level or whether only certain occupations will be affected leaving others relatively more disadvantaged, though possibly less in terms of deskilling than displacement. Given existing levels of unemployment, at present there appears little to justify the optimistic predictions of the tertiary service or the quaternary (education and leisure) sectors expanding to accommodate the displaced, especially given the tendency to overlook the increasing utilisation of labour saving technology in these sectors.

Certainly it has long been predicted (for example, Galbraith 1967) and supported empirically (for example, Amin 1984, Marstrand 1984) that the increasing application of new technology would serve to reduce manual and routinised workloads whilst increasing the

demand for skilled professionals and specialists. Immediately the question arises as to who will comprise this rising battalion of specialists and against what sort of criteria, such as educational qualifications or even the name of the school, will they be assessed as suitable candidates for specialist niches. It cannot be assumed, as it was by labour economists (viz, Dunlop 1964) that employment structures and the classification of jobs is fundamentally determined by technology. This is tantamount to a highly misleading depolitisation of technical change (Wilkinson 1981) in the structure of advantage, a theme which has, unsurprisingly, received considerable attention from Marxist analysts. The oft cited work of, for instance, Braverman (1974) and Carchedi (1975) contend that the nature of technical change can only be understood in terms of pre-existing inegalitarian arrangements of power in capitalist societies. Those already disadvantaged will inevitably experience more of the same.

Less politically passionate, supporting analyses have come in the form of the 'dual labour market' thesis of Doeringer and Pore (1971) and educational sociologists (Bourdieu and Passeron 1977, Bourdieu and Boltanski 1978, for example). Their evidence strongly suggested that a non-technical but high social status and associated elitist educational background were the most important criteria for gaining access to top jobs in Britain. It would seem, then, that functionalist theories of occupational stratification (Davis and Moore 1948) are unhelpful in understanding the role of new technology in changing patterns of employment and industrial

structures. Changes here are influenced more by capitalist power relationships where social choice is unevenly distributed, in turn ensuring that technology is harnessed in ways which benefit those already in advantageous positions.

However, in the 1980s the dynamics of Britain's trading position have changed and microelectronics represents a different technological dimension compared to earlier, more rudimentary forms of mechanisation insofar as the implementation of computerised information processing affects all organisational functions and perhaps increasingly all hierarchical levels. There is general acceptance that the pace of technical change is accelerating and the continuing shortage of technical specialists together with the increasing necessity to comprehend computerised working techniques may be exerting pressures on what have been asserted as the traditional modes of organisational recruitment and promotion. Whether there are ripple effects in terms of the requisite criteria for top jobs is a subject for research. Although, even if the 'agents of capital' are not adversely affected, the same conditions do not necessarily apply in all capitalist countries since it cannot be assumed that pre-existing institutional and organisational arrangements manifest in identical ways. For example, by contrast to Britain, in the similarly capitalist country of West Germany there is no societal honours or peerage system, no elitist private education and it is widely recognised that the production function and associated occupations have

always commanded a relatively higher social status (Lawrence 1980, Bessant and Grunt 1985).

A fundamental issue, then, concerns the capability of macro analytical paradigms to provide adequate explanations of the effect of technical change on the societal structures of employment and industry in countries which appear to manifest similar political and socio-economic structures. Without cross-national comparative research clarification of this issue remains elusive. Further, whilst across capitalist countries the advent of micro-electronics appears to have spawned the development of similar, new (sunrise) industries, arguably the degree of sensitivity of macro theories would be highlighted by investigating the effects of technical change on existing industries for it is here that the motivations underlying technical change and possibilities for or actualities of deskilling and displacement would be most transparent.

One immediate problem arises, however, in defining the boundaries of 'an existing industry' particularly where this may be very differently structured between two capitalist countries or, for example, the level of State subsidies accruing to all or parts of the industry. A structured sampling frame may circumscribe the difficulty where the principal selection criterion is cross-nationally matched pairs of non-public sector business organisations which are constituents of a particular industry and large enough to make a significant contribution to it. These

large firms are likely to be in the forefront of technological application, thus manifestations of change may be taken as indications of industrial trends.

This then, represents a shift in the level of analysis from structural-industrial to industrial-organisational where long standing research endeavour has attempted to isolate the dominant influence on the patterns of differentiation and integration of work activities.

Technology emerged as this influence in the late 1950s: economic success was seen as dependent on the compatibility of the organisational structure to the technology utilised (Woodward 1958 and 1965). This contention has since been taken as the initial expression of the 'technical implications' approach. Recent research has noted the importance of analytical level: organisation structure as a whole was indicative of organisation-wide technology and the same principles applied to sub-units (Comstock and Scott 1977). The essential link being the element of control in the sense that the technology employed demands certain facilities of the organisation's control systems (viz, Ouchi 1977). However, opinion as to the importance of technology as a determinate influence on organisational structure is divided. On the one hand, research has been criticised on both theoretical and empirical levels: many different definitions of technology have been utilised (Taylor 1971), research designs have often lacked rigour and effective operationalisation (Davis and Taylor

1976). Thus the link between technology and overall work structuring remains unclarified (Donaldson 1976). On the other hand, Reimann and Inzerilli (1979) have pointed out that research utilising a certain definition of technology (process of transformation of inputs into outputs), and which has maintained a consistency of analytical level of technology and organisation, has produced appreciable consistency in research findings. Technological determinism, therefore, cannot be ruled out.

The influence of technology per se, however, was one investigative strand stemming from Woodward's studies (also Perrow 1967 and 1970). The other is considered to be the genesis of contingency theory insofar as certain environmental factors were also perceived as influencing the structure of business organisations. Type of manufacturing technology, product market and pressure for innovation were the key environmental variables suggested by Burns and Stalker (1961). Lawrence and Lorsch (1967) followed this theme but contended each of the three principal environments (technology, market, research and development) had dissimilar operating modes which would be reflected in the appropriateness of differentiated structures between companies and between work units in the same company.

The work of Lawrence and Lorsch indicates the thinking underlying what has become known as 'contingency' theory. Here the three main organisational parameters were tasks to be executed, those responsible for task execution and the environment in which work

is conducted. An appropriate organisation structure is one which achieves an acceptable fit between these parameters in the presence of sets of contingencies which might include technology, environment, size and degree of independence from other organisations (Hickson et al 1969). These sets of contingencies are held to determine organisation structure in situations of significant pressure for high performance which ipso facto becomes a further contingency.

Whilst it may be important to bear in mind the character of technology and other contingencies, these 'technical' analyses of organisational structure have tended to overlook or downgrade the significance of the human factor in the workplace. Whereas, the social system and technology were regarded as co-determining organisational dimensions of economic efficiency and success by the socio-technical systems approach (for example, Trist et al 1963). Optimising along one dimension was necessary but insufficient for optimal results in the organisation as a whole (Rice 1963). Despite the conceptual and operational problems associated with 'joint optimisation' (viz, Kelly and Clegg 1982) and criticisms of the use of functionalist oriented terminology such as systems' needs and adaptations (Silverman 1970) - recently countered by Donaldson 1985 - the socio-technical systems approach did demonstrate the possibility of alternative forms of work organisation around certain types of technology. And, therefore, that forms of differentiation and integration of work

activities associated with technology were accessible to social choice.

The importance of social choice is now widely recognised, not least because it begs further questions about firms' decision making processes - who decides how technology should be utilised and why. It is not at all clear, as the 'technological innovation' school appear to suggest that economic survival is 'dependent' on the adoption of certain technologies (Nickell 1978): imperfections in knowledge, in market competition and uncertainty about the future economic climate are all likely to affect firms' decision making processes and outcomes (for example, Goddard and Thwaites 1980). More fundamentally, underlying the processes is the structure of decision making in capitalist enterprise where formalised power is hierarchically arranged and clearly not equally distributed to all organisational members. If, as can be reasonably assumed, the interests of different segments of the workforce do not always coincide, then the exercise of power in organisational decision making processes is inherently political and may be associated with what Pfeffer (1978) has referred to as the 'contest for control'. There is no reason to suspect that underlying philosophies and the conduct of technical change is extraneous to organisational polity. Quite the reverse (Wilkinson 1981). Moreover, the exercisers of power may well have harnessed the implications of technological change for the structuring of work activities (Pettigrew 1973).

Here, the principal implication is that only certain groups of employees will experience any possible detrimental effects of technical change in the workplace where the common denominator of these groups is that they exercise relatively little power (cf Child 1986b). Testing the plausibility of this argument, however, requires investigation at the level of the work performed by these groups or representative individual members thereof. And, indeed, concern about the dehumanisation of work associated with technical change has fuelled much empirical study and experimentation at the level of individual job design.

In an early study, Blauner (1964) alerted observers to the possibility that technologies at different stages of advancement might be associated with differential effects on job satisfaction. According to four defined dimensions of alienation, Blauner contended that job satisfaction was highest in industries utilising the least and most advanced technologies - the oft cited inverted 'U' shaped curve of alienation. That this thesis has hitherto received little empirical support may, in part, reflect the lack of comparative studies across occupations or sectors: or the conceptual inadequacy of and assumptions underlying Blauner's approach (Eldridge 1971). In assuming that technology determined work organisation, Blauner failed to take account of other possible influences: management philosophies and policies (Feickert 1979) or strategies (Child 1978); the structure of the labour and product markets within which a company operates (Caves 1980); the position of the worker in the organisation's production



process (Friedman 1977b); individuals' ability to manipulate the circumstances of the work situation (Berg 1980).

Moreover, Blauner was apparently oblivious to the significance of individual differences in the meaning of work and the determinants and methods of pursuing job satisfaction. There now exists a good deal of evidence indicating the complexity of the concept of job satisfaction and of the necessity of accommodating this complexity in research designed to investigate the effects of technical change (for example, Goldthorpe et al 1968, Hulin and Blood 1968, Armstrong 1971, Parker 1971, Bechhofer 1973).

During the 1970s as technical change became increasingly associated with the degradation of work, a burgeoning concern with promoting job satisfaction grew into, an albeit dispersed, Quality of Working Life movement. QWL espoused the principal aim of

"building into peoples' jobs, quite specifically, greater scope for personal achievement, more challenging and responsible work and more opportunity for advancement and growth"

(Paul and Robertson 1970:17).

Such job redesign innovations had already been forecast as the first essential step towards the development of industrial democracy (Emery and Thorsrud 1969), whilst American exponents of the maturing socio-technical systems approach saw *"participation and control, personal freedom and initiative"* (Davis and Taylor 1972:421) as representative sentiments of the new (post-

industrial) values. Increased productivity was also regarded as a foregone outcome of job redesign to promote workplace autonomy (Hackman 1977).

Yet the excitement and enthusiasm which characterised the mushrooming job redesign experiments in Europe dissipated as dissemination of the new practices did not follow on any appreciable scale. What did follow were prolonged exchanges as to why the early experiments failed to produce the expected results of joint optimisation on both social and technical dimensions. QWL was criticised for inadequate theoretical understanding and empirical operationalisation of the problematic relationships between work content, job satisfaction and productivity (Srivastra et al 1975 and 1977). And whilst investigators were aware of different motivations underlying job redesign, the theoretical absence of any reference to power bases and conflicting interests within organisations was reasoned to be its *mole ruit sua* - the inherent seeds of its failure (Bolweg 1976).

Whilst Warner (1984a) has since extensively analysed such experiments and drawn attention to their national specificity, it is, of course, this socio-political context of technical change, the labour process within capitalism, its organisation and control which has always been the central issue for Marxist observers (Price 1980) applying analysis to different levels and units. Challenges to the critical political economy view of technology as an instrument of capital used to drive forward the 'frontiers of

control' over the labour process (Beynon 1973, Stone 1981) have come from many sources. Bechhofer argued (1973:122) that,

"both the classical Marxist view of alienation and a technologically deterministic view of worker satisfaction in its widest sense depend on making untested and general assumptions about the fundamental nature of man in his work."

Elgar (1979) questioned Braverman's portrayal of labour as artless, unresponsive acceptors of conditions metered out by capital. Empirical evidence has shown that sometimes, despite, management efforts, skilled workers have maintained job controls (Friedman 1977b, Wilkinson 1981, Littler and Salamon 1982). Managements' choice of workplace control strategy may be less influenced by their relationship to production than the degree of flexibility within the labour market and the position of workers within the labour process (Friedman 1977a and 1977b). Relatedly, reliance on new technology may license novel 'disruptive potential' affording control over work for the group possessing such facility (Marchington 1979). Political enterprise on the part of workers appears to be increasing following the annexation of technological knowledge and skills (Gross 1953, Child and Partridge 1982, Wood and Kelly 1982, Thompson 1983, Rose and Jones 1984).

Despite evidence to the contrary (Hedberg and Mumford 1975, Klein 1976, Feickert 1979), the design of computerised systems may be orchestrated in such a way as to increase operator control and

enhance human cognitive and social skills (Noble 1979, Wilkinson 1983, Wall 1984): and the same principle has been found to apply to office workers (Buchanan and Boddy 1983, Buchanan 1985). Yet, technical change has been frequently associated with the impoverishment of jobs and persons so employed (Cooley 1976, Nichols and Beynon 1977, Noble 1979): including within the office environment (Hoos 1961, Mumford and Banks 1967, Cooley 1977, Weir 1977, Crompton and Reid 1982, Child 1986a). Neither has deskilling and displacement been confined to un- or semi-skilled strata, managerial and professional employees are also at risk (Haug 1977, Loveridge 1979, Jenkins and Sherman 1979, Cooley 1981, Child 1986a).

The appearance of undesirable consequences of technical change on work within higher organisational echelons may be a reflection of one crucial difference between microelectronics and its technological predecessors:

"Just as, in the first industrial revolution, machinery was used to overcome the limitations of the human physique, so in the second industrial revolution, as it has been called, microelectronics will be applied to overcome the limitations of the human brain."

(Milne 1982:102)

Clearly, as we progress through the era of computerisation there remains much to be clarified about the nature of technical change on the work organisation of employees and occupational groups. Of some significance, both theoretically and empirically, is the

location of managerial and professional strata: for it is these which have traditionally occupied and perpetuated positions of relative social and economic advantage; have harnessed social choice; have thus far been exempt from the degradation of work associated with earlier forms of mechanisation; and have institutionalised the mystification of occupational knowledge and the indeterminacy of their work tasks. The poignant questions are, therefore, whether new technology will be instrumental in undermining hitherto advantaged socio-economic positions and whether current and potential developments are features characteristic of the capitalist order or more complex mechanisms within such a form of political organisation, such as the expression of cultural differentiation.

2.5 SYNOPSIS OF THEORETICAL ISSUES TO BE ADDRESSED

The research was conceived and designed to address several theoretical issues related to culture, the professions and technical change.

Culture

The principal issue here was whether the concept of national culture is reliable and valid and, therefore, a useful social scientific instrument.

Whilst culture is a word often used in everyday parlance and imbued with a common-sense understanding of its meaning, 'culture' is rarely defined, or its origins and implications examined. The research was designed to expose national differences, if any, which could not be explained by differences other than those specific to national settings.

A failure to expose nationally specific differences which had consistent and relevant impact on aspects of technical change and professional workstyle would not, of course, have meant that national culture does not exist. Rather, that the concept could not be regarded as reliable or as helpful as other concepts (the logic of industrialisation, capitalist economic organisation etc) in understanding and explaining aspects of social life.

If, however, consistent and relevant nationally specific differences were exposed, the challenge was then to understand and explain the nature and source, and the influences of these differences on social life. Further, if the nature, source and influences of these national differences coincided as consistent themes or interrelated patterns within a nationally specific context, then it would be possible to define what culture is - the reliability of the concept - and to describe the ways in which culture consistently informs aspects of everyday social life - the validity of the concept.

If, indeed, a cultural theoretical framework could be developed which may be held to adequately explain cross-national differences, then the compelling logic of extra-cultural or trans-national (principally, critical political economy and contingency) perspectives would appear more limited in their similar capacity to explain the nature of events, and even change, within society.

The Professions

The principal issue here focused on the utility of the three major theoretical perspectives on the professions (taxonomic, critical and processual) as frameworks for understanding the phenomenon of so-called professional occupations. This was to be achieved by, firstly, the selection of a British industrial occupation which would be embraced as 'professional' by all three perspectives and selecting ostensibly the same industrial occupation in another

country but, as Britain, similarly capitalist in socio-economic and political form. This protocol would, secondly, enable an exploration of the bases of the theoretical perspectives, put simply as societal function dependent on specialist, even esoteric, knowledge; the inequitable distribution of power in capitalist societies; occupational strategies within a temporal context.

Also, because the processual perspective recognises 'change' to the extent that an occupation may develop or lose professional status according to aspects of change within wider society, the research was designed to focus on the ways in which technological advances may be influencing changes in professional workstyle. And, thus, the implications this might have for professional occupational organisation and operation: for example, increasing codification of professional knowledge with or without the development of new areas of indeterminacy.

The nature of these changes, if any, would in themselves highlight elements of explanatory capacity of each of the theoretical perspectives, say, the essential nature of professional knowledge or the identification of professional power with capitalist arrangements of power.

If the selected professional occupation was found to be organised and operating in a similar manner in both countries, and possibly undergoing similar changes, then the challenge would focus on

understanding the basis for these similarities and, thus, the respective greater or lesser utility of each theoretical perspective.

If, however, the professional occupation was found to be organised and operating differently in each country, and possibly not experiencing similar changes, then the premises and compelling logic of each theoretical perspective would be open to question. It would then be necessary to examine the theoretical premises on a deeper level, perhaps even to explore implicit meanings, in order to explain why the explanatory capacity of the perspectives was considered inadequate. If this could be achieved, it may then be possible to generate a new line of reasoning which would embrace the differing occupational circumstances in each country.

Technical Change

Departing from a point which assumed the non-neutrality of technological development and application, the first issue here was whether similar technologies are developed and always applied in a similar manner in capitalist countries.

The second issue was a combination of the precise subject and level of analysis. Clearly, it was not possible to embrace various levels of analysis in depth. Nevertheless, it was possible to select a sample according to criteria (detailed below) which would indicate wider underlying trends and allow projections

at different levels of analysis. Rather than, for example, focusing the study on professional practitioners, findings from which would be very difficult to extrapolate.

The top level of analysis was societal where the concern centred on the automation-unemployment nexus, the industries and categories of employees most detrimentally affected by technological change. And the main question: is the application of a similar technology always associated with similar changes in the structures of industry and employment in capitalist countries? If so, then the de facto nature of technology, perhaps as integral to a logic of industrialisation, and/or the nature of capitalist society may be of primary influence and support the relevant macro theories including a possible re-assessment of the non-neutrality of technology - technological determinism. On the other hand, if the application of a similar technology cannot be associated with similar changes in structures of industry and employment across two capitalist countries, then more specific national or cultural factors may be of key importance. The challenge then would be the isolation and explanation of the influence of these key factors: and technology could not be viewed as fundamentally determining the classification of jobs.

Technological determinism was also an issue at the next level of analysis, that of organisational structure. To what extent is organisational structure determined by technology per se or technology as one factor within a set of contingencies? By

contrast, the importance of social choice underlying processes of technical change and patterns of integration/differentiation of working activities is now widely recognised. The critical perspective has harnessed social choice to organisational polity within capitalist societies where the implication of an inequitable distribution of power is that those who exercise relatively little power are most likely to experience detrimental effects of technical change - work task intensification, deskilling or displacement. Given similar technology and that power within capitalist economic organisations is usually held to be concentrated at the top of hierarchies, then a similar profile of effects on work organisation associated with technical change would be expected at similar hierarchical levels in both countries.

This, however, requires substantive research at the level of individual jobs throughout organisational hierarchies. The rationale here is that, working within an interpretive paradigm, it is not adequate to rely solely on comparative concrete measurements relating to changes in working arrangements before and after computerisation (for example, work task time cycles or logistical movements) because this alone does not expose the contribution to the process of technical change made by incumbents or their interpretation of its outcomes. What may appear to the researcher as more variable or responsible work may be perceived primarily by employees as an intensified work schedule within an increasingly pressurised environment lacking the necessary support

or control features. Nor is it adequate to rely solely on the opinions of employees' representatives, such as a departmental manager or work group spokesperson, because it cannot be assumed that different incumbents interpret ostensibly the same situation in the same manner, especially if political capital is to be gained by creating a favourable impression of technical change.

There has been a long standing academic interest in job design, re-design, the concepts of job satisfaction and enrichment. Many earlier studies of mechanisation revealed the degradation of work at lower organisational levels and, thus, were taken to support a Marxist analysis of technical change. A fundamental difference with computer technology, however, is that it is applied to replace human reasoning - mental rather than motor skills. Since mental (though not motor) skills are exercised throughout organisational hierarchies, a further issue, therefore, the exploration of which may shed light of the relative influences of technology, other contingencies and capitalist distribution of power, is whether microelectronic technology will be similarly applied throughout organisational hierarchies across different capitalist countries. If so, then, the de facto nature of technology emerges once again as an important influence. On the other hand, if this new technology is applied differently at different hierarchical levels (concentrating deskilling etc at the bottom) but similarly in both countries, then Marxist analysis would be supported. Finally, if the research reveals different patterns within the processes and outcomes of technical change and

work organisation between the two countries, then macro or trans-national perspectives would appear of lesser importance than nationally or culturally specific influences.

These were the theoretical issues which guided the level of research to that of the individual job. For the exploration of attitudinal phenomena was considered necessary to expose culturally related influences: and, with the leverage of institutional analyses, possible to study technical change and work organisation at this level and apply inductive reasoning to higher levels of analysis. Whereas it would not have been possible, for example, to concentrate at the institutional or industrial levels and apply deduction to estimate the degree of, say, deskilling or displacement throughout firms' hierarchies across two countries. These theoretical issues also influenced the criteria upon which the research sample was based: professional occupational members (accountants) employed at different hierarchical levels in finance departments of large, non-sunrise, non-public sector, British industrial companies with operating subsidiaries in West Germany: and in West Germany respondents were also to be located within finance departments, if possible occupying comparative hierarchical positions to their British counterparts.

2.6 SUMMARY.

The concept and possible influences of culture on the nature of social events within a society have generally been disregarded by macro analytical paradigms. Not only may culture be accessible to investigation through rigorous research instruments but the accommodation of cultural influences is arguably a necessary precursor to the explanation and fuller understanding of certain structures, processes and events within society.

The effects of technical change at macro levels of employment and industry are composite reflections not only of technological development itself but also of technical change on the structures of pre-existing industrial organisations. A good deal of research has suggested that technology is only one factor contingent upon which an organisation structure is appropriate. However, to understand the impact of technology on organisation structure it may be less relevant to consider the physical nature and capabilities of the technology than to realise how these have featured alongside the objectives and expectations which have informed strategic choice about how technology is to be used within the complexion of capitalist relationships of production. From this perspective, the outcome of an essentially political process affects how work is organised around technology, that is, who does the work, the techniques employed and attendant responsibilities. All of which may or may not be coloured by cultural influences.

Today, interest in technical change focuses on the utilisation of microelectronic, and latterly information, technology. This evolution has generated a number of occupational specialists - electronic engineers, systems analysts, software designers, computer programmers. Sorge's (1981) projection of increasing shortages of these skilled employees appears to have been accurate [1]. It has also been argued and shown empirically that economic organisations generally are and will continue to employ proportionately more highly qualified and technically specialised personnel, although at present the composition of this rising legion of organisational specialists is unclear. Since electronic controls lack human adaptability (Barron and Curnow 1970) and new working techniques require particular personal characteristics [2], it is possible that computer related skills will be engrafted onto existing traditional specialist occupational categories.

In Britain, some of these categories assume the label 'professional' but the impact of information technology is open to a number of scenarios. From a critical perspective, professionals, agents of capital and those already exercising strategic choice would be unlikely to pursue any courses of action that threaten their privileged position. That is, unless, given the existence of horizontal cleavages within particular professions, elitist decision makers use new technology to further reinforce these gulfs. This will depend on the continued ability of elites to maintain or develop new areas of indeterminacy in an era of

microelectronics which some have argued will replace human reasoning (for example, Maddock 1978).

Proponents of the taxonomic perspective focus on the function of professional occupations and the nature of professional knowledge. Whilst codifiable aspects might enable the transference of certain formerly professional work activities to a sub-group of para-professionals, the esoteric quality of core professional knowledge is unlikely to be replaced by information technology. Moreover, if industry is moving towards a higher regard for specialist skill, might this be tantamount to a future subjugation of the administrative by the occupational principle of work organisation (Freidson 1973)? On the other hand, if we are moving towards a knowledge-based and more meritocratic society (Bell 1973) any escalation of professionalism within industrial organisations might not be accompanied by present day connotations of status and privilege.

From a processual perspective the scenario is more complex. Firstly, because professionals do not constitute an homogeneous entity, information technology is likely to have differential effects on professionals depending on the nature of their work, their employment context and their degree of success in harnessing new technology within strategies which sustain occupational control over work activities. This may imply a move towards positively embracing information technology and increasing the mystification of existing knowledge by managing its computer-

isation and processed information output. Conversely, the de facto importance of information technology may be disregarded as more leverage is applied to formalised statements of competence, expertise and social worth, such as professional certification. Secondly, any movement by professionals will not occur in isolation from other institutional mechanisms, processes and arrangements of power in wider society.

The uncertainty surrounding the current and future complexion of professional status and work activity may, in part, be fuelled by inadequate theoretical frameworks for analysing the professions and technical change. The scenarios above may bear little relevance to similar occupations in other countries as a result of qualitatively different historical profiles and pre-existing structural arrangements. Thus, investigation of cultural influences, as of motivations underlying technical change and the nature and consequences of political processes, requires both an analysis of structural arrangements and a methodology which penetrates attitudes, beliefs, ideas, and exposes values, reasons and objectives. Ultimately, then, it is at the level of individual job structuring where the experiential nature of technical change is most transparent and can be captured.

Notes to Chapter Two

1. The table below indicates the profile of computer staff shortages from 1982-1985 reported by a sample of companies in a recent Salary Survey by the National Computing Centre.

PERCENTAGE SHORTAGE ON COMPLEMENT

	1982	1983	1984	1985
SYSTEMS ANALYSTS	5.7	8.2	7.9	10.1
ANALYSTS/PROGRAMMERS	8.3	8.2	10.2	13.0
PROGRAMMERS	7.8	7.6	10.2	14.0

TABLE 2.1

Source: Business Computing and Communications, September 1986:27.

2. Sorge (1981) lists these characteristics as:

- (a) ability to conduct dialogue with equipment;
- (b) ability to link technical, economic and social considerations with an appreciation of equipment and work methods;
- (c) quantitative appreciation of different processes;
- (d) an ability to apply analytical thinking to different work processes;
- (e) a planned and methodical approach to work;
- (f) a sense of responsibility and autonomy in work;
- (g) an existing stock of theoretical or abstract knowledge.

CHAPTER THREE

THE CONCEPTUAL FRAMEWORK AND PROCESS OF THE RESEARCH

- 3.1 INTRODUCTION
- 3.2 THEORETICAL PERSPECTIVES ON SOCIAL SCIENCE
- 3.3 FURTHER THEORETICAL AND PRACTICAL CONSIDERATIONS
INFLUENCING RESEARCH STRATEGY AND DESIGN
- 3.4 OPERATIONALISED DEFINITIONS
- 3.5 SUMMARY OF RESEARCH OBJECTIVES, STRATEGY, DESIGN AND
METHODOLOGY
- 3.6 SELECTION OF SAMPLE
- 3.7 COMPARATIVE FEATURES OF THE CROSS-NATIONALLY MATCHED PAIRS
OF COMPANIES
- 3.8 THE CONDUCT OF THE RESEARCH
- 3.9 INTERPRETATION AND PRESENTATION OF THE FINDINGS
- 3.10 CROSS-NATIONAL RESEARCH PROBLEMATIC
- 3.11 SUMMARY

INTRODUCTION

The discussion in the previous chapter outlined a number of theoretical issues which may, in part, reflect inadequacies of existing theoretical perspectives. This chapter details how the issues related to culture, the professions and technical change were transformed into a piece of empirical research.

The initial task was perceived as the construction of a appropriate method which would furnish evidence to address the theoretical issues. This design process inevitably involved an assessment of social science as an institution and social scientists, including myself, operating within particular conceptual frameworks and on the basis of certain assumptions about the social world. Section 3.2 argues, firstly, that social scientists' assumptions about human nature, ontology, epistemology and the research methods employed are not right or wrong according to pre-determined rules, only meaningful or meaningless in the context of the issues under investigation. And secondly, that it is fruitful to view social science as a particularistic social reality with the express purpose of communicating knowledge about the social world. Within this collective purpose the various tools at social scientists' disposal become complementary - provided that the assumptions about social life which inevitably underpin research activity are not disregarded, rather that they are clearly defined and specifically incorporated in research strategy and design.

Section 3.3 underlines further aspects of professional work organisation, the cross-national comparison and technical change which influenced the research programme and protocol. The terms used throughout this thesis are clarified in Section 3.4 whilst 3.5 summarises the research objectives, strategy, design and methodology. The schedules which represented the core of questioning during interview sessions have not been included in this chapter but consigned to **Appendix 1** for reference at the reader's convenience. The process of selecting sample companies and respondents is described in Section 3.6. **Appendix 2** is a detailed description of the total sample including the coding used for each respondent.

Section 3.7 presents, in tabulated form, the comparative features of each of the cross-nationally matched pairs of companies. Doing research is a craft which requires particular skills. These skills and how they further developed during the practical execution of the research are discussed in Section 3.8. Section 3.9 draws attention to specific features of the interpretation and presentation of the findings: the latter in particular relates to the purpose of the **Exhibits** throughout Part Two (Chapters Four through Eight) of the thesis. Many of the problems encountered by social scientists will be familiar to readers. However, cross-national research is a relatively uncommon activity which presents a major difficulty especially when executed with very limited resources. This difficulty is highlighted in Section 3.10.

3.2 THEORETICAL PERSPECTIVES ON SOCIAL SCIENCE

Nowadays it is generally recognised that a social scientist's personality and biography influence a particular interest and the orientation with which that interest is pursued. Exposure to paradigms of Western sociological thought behoves a social scientist to confront the personal predilections and assumptions about human nature which inform the research process.

One main social science dimension presented by Burrell and Morgan (1979:3) comprises distinct but related sets of assumptions about human nature, ontology, epistemology and methodology. Social scientists and theorists occupy a position somewhere on a subjectivist-objectivist continuum of these four parameters.

THE SUBJECTIVE-OBJECTIVE DIMENSION

THE SUBJECTIVIST APPROACH
TO SOCIAL SCIENCE

THE OBJECTIVIST APPROACH
TO SOCIAL SCIENCE

NOMINALISM	← ONTOLOGY →	REALISM
ANTI-POSITIVISM	← EPISTEMOLOGY →	POSITIVISM
VOLUNTARISM	← HUMAN NATURE →	DETERMINISM
IDEOGRAPHIC	← METHODOLOGY →	NOMOTHETIC

Burrell and Morgan conceive of human nature as the relationships of human beings to the environment. At the objectivist end of the

continuum human behaviour and experience are considered as totally determined or constrained by the external environment. Man is, therefore, mechanically reactive rather than proactive and experiences are products of the environment. Contrarily, in a subjectivist sense, actors are seen to be completely autonomous, acting voluntarily to create and control the external environment as flowing from the exercise free will.

Arguably suppositions at either end of the determinism-voluntarism continuum may be both plausible or untenable. Clearly in everyday life it is questionable whether behaviour is as predictable, conforming to universal forms of rationality as the determinist stance appears to suggest. The dangers of this assumption are that it may obscure the nature of actors' differently interpreted realities upon which certain behaviours may be predicated and, hence, the social scientist's apprehension of them.

On the other hand, it is axiomatic to subjectivist reasoning that the ontological condition of life cannot be viewed as concrete, empirical or 'out there'. Rather than the social world existing independently of, external and prior to the cognition and consciousness of individuals, if individuals are viewed as acting voluntarily to create and control the environment, then that environment - the social world - must be seen as a product of individuals' actions influenced by their cognition, consciousness and interpretation of the reality of that environment which includes natural phenomena. In extremis, however, in this social

world self-existence becomes the only certainty and nothing is retained as having an independent reality. This invokes a problematic in terms of how actors communicate, achieve mutual understanding and organise knowledge. As a critique of extreme subjectivist idealism, solipsism and its epistemological and methodological implications have been countered by sociologists operating within the interpretive paradigm who have sought to explain behaviour by understanding the meaning actors attach to their actions and the actions of others, that is, Weber's concept of Verstehen.

Verstehen for Weber was the very ontological condition of life as such in society. Thus with understanding (or more appropriately 'empathy') social action could be analysed by the 'interpretation' of observed behaviour. Expanding Weber's concept of 'meaningful behaviour', Schutz (1964, 1967) questioned what it meant for an actor to 'attach a meaning' to personal actions and how an actor experienced others as separate entities with their own subjective experience. Schutz argued that this could not be understood merely by directly observing behaviour nor by knowing what an actor wanted to accomplish and why. Motives were incorporated in a 'system of relevance' where appropriate action in the present situation was decided after recourse to a storehouse of past experience. Furthermore, action is not only meaningful after its completion but, because human beings are able to reflect on and perceive the meaning of events as they are occurring, experience and meaning are ongoing: interaction is essentially dynamic.

Schutz' phenomenology overcame the central problem of intersubjectivity - how we understand each other's behaviour - by referring to a 'typification' process whereby actors applied learned schemes of interaction based on a shared body of common sense knowledge. The tension between accepting the world as objective reality and simultaneously appreciating a subjective (and intersubjective) experience of it was circumscribed by the largely unconscious process of the 'epoché' of the natural attitude. Adopting this natural attitude and making sense of the everyday world essentially involved the utilisation of ideal-typical constructs. These, being natural and spontaneous, were of the 'first order', whilst 'second order' constructs (ideal types of ideal types) were employed by sociologists attempting to explain the social world within the context of a particularistic method of typifying experience in order to organise knowledge.

Thus, sociology represents a finite province of meaning, as does, for example, the ontology of magic, religion or science. Concomitantly, the social world comprises multiple realities but although each is also epistemologically specific, the typical constructs employed in the formation of models of human action are assessable and intelligible to actors in terms of common-sense interpretations of everyday life (Schutz 1964:64).

This conclusion represents a point of departure for ethnomethodology, the central recommendation of which,

"is that the activities whereby members produce and manage settings or organised everyday affairs are identical with the members' procedures for making those settings accountable."
(Garfinkel 1967:1)

By contending that routine activities in the social world are not to be separated from the techniques employed by actors in making sense of the environment, Garfinkel indicates a movement away from the principal importance of subjective experience and the motivational analysis of Schutz and towards a study of situated particulars and expressions. Objects, events, actions, people, physical location and language are indexes of the situation which both confer meaning on and derive meaning from the situation. Because they embody taken-for-granted knowledge, indexical expressions are a sort of shorthand representation of the total communication made comprehensible by sets of 'glossing techniques': practices during which members utilise everyday knowledge to make good the deficit of indexical expressions. Sense and meaning, therefore, are not automatic but depend on members' ability and willingness to do the work of coding and decoding.

For Garfinkel, indexical expressions are irremediable: the situated particulars of interaction can never be freed from their context if sense and meaning are to be discerned and, therefore, knowledge extended. The implication for research is that natural and social scientists who ignore the ubiquitous practice of indexicality or attempt to repair it are sabotaging the integrity

of the research situation. Social science must first accept the existence of everyday taken-for-granted knowledge and proceed by recognising that the investigator is also utilising the same everyday knowledge, assumptions and employing the same techniques for making sense of the world as those whose behaviour is under investigation. For example, if I am talking to you, I assume you are listening to me; if I ask you a question, I assume you will answer my question and vice versa. By making such assumptions and employing such techniques, it is possible for sociologists to explore the existence of different meanings which attach to the concepts underpinning subjective realities. Thus,

"....sociology is just another life-world, a folk sociology created by its members with no less, but no greater, validity than any other constructed reality."

(Mennel 1974:55)

Mehan and Wood (1975) add that any trip into one of the multiple realities constituting the social world is temporary: its 'elastic' quality ensures the inevitability of returning to the paramount reality of everyday life. Arguably, then, it is this basic reality which binds human existence and allows mutual understanding and ultimately the creation or discovery and transmission of knowledge.

The ethnomethodological school divides into two camps (Douglas 1971), the 'linguistic' and 'situational', though this relates more to empirical emphasis since ethnomethodology per se borrows

heavily and fundamentally from the language philosophy of Austin and the later Wittgenstein. Language is not held to be independent of the manner in which it is used, not indicating some other reality, it is ipso facto reality and its meaning cannot be separated from the occasion of its use. *"Words are also deeds"* (Wittgenstein 1953:35). If as Winch (1958:15) argues *"our idea of what belongs to the realm of reality is given for us in the language that we use"* and, clearly, social life in different countries is conducted within the context of different languages, subjectivist sociology implies that cross-national research should be sensitive to the subtleties of meanings inherent in what may be interpreted as the same words across different countries. Moreover, since the meaning of language is conveyed by its usage and knowledge of the rules governing its usage and since polymorphism [f] cannot be discounted, retaining the integrity of the situation demands that research be conducted in situ.

Indeed, the methodological reliance on laboratory controlled experiments, survey methods and secondary documentary sources has constituted a subjectivist criticism of conventional social science together with theoretical critiques - conceptual reification, misplaced abstractionism, for example. This presents the danger of subsuming the reality of research subjects by that of the researcher resulting in economising on knowledge. However, it is difficult to see how the processes of conducting

f: Where one word has many and often totally unrelated meanings depending on the criteria surrounding its use.

any aspect of everyday life would unfold without certain assumptions being made - that mutual understanding is possible and achievable, that the process of negotiating reality is founded on some body of shared common-sense meanings and knowledge. The pertinent question, then, is one of degree. To what degree is indexicality or rule governed behaviour assumed to exist? Nomethetic methods depend on the assumption of a high level of rule governed behaviour whilst ideographic methods accommodate situated particulars, but even within subjectivist sociology opinion on the distribution of indexicality is divided. Barnes and Law (1976:28) argued, as did Garfinkel, that all discourse and experiences are indexical, though

"that is not to say that meanings and truth values are not sometimes effortlessly and unproblematically decided by actors as a matter of fact."

Likewise Coulter (1971:308) contended *"thought is the non-articulated manipulation of linguistic symbols....it is made of the same stuff as language"*. Language, therefore, cannot be true or false according to some rule only meaningful or meaningless in the sense of being contextually intelligible or unintelligible. Similar courses of action only bear 'family resemblances', typified interpretations are merely time-saving devices and then only valid in context. Indexicality is universal, thus to impose rules would be to de-contextualise. There can be no generalised meanings or contexts which underlie social events.

On the other hand, Cicourel (1973) argued that universals of meaning, non-indexical expressions do exist. Literal translations are possible because there are rules which underlie and pre-determine the meaning of events. This is the conceptual framework within which the conversational analysts operate when investigating the 'invariant practices' employed by actors during conversation.

This search for regularities together with an ontological position which recognises, at least some, rules or structures being relatively immutable and with the capacity for pre-determining the meaning of events in the social world, comes close to an objectivist stance in Burrell and Morgan's schematic. Or as Douglas (1971) and Mennel (1979) have indicated, ethnomethodologists end up in a behaviourist position. Arguably, what this circularity suggests is that, as with language, the assumptions and methods of social scientists cannot be true or false according to some rule only meaningful or meaningless in the context of the issues under investigation. There is then, a complementarity of differing assumptions and research techniques in the activity of communicating new knowledge.

Thus it becomes incumbent upon social science as an institution to devise methods which expose different realities and accomplish an understanding of them. Two main methodological implications arise from a conceptual framework which recognises human nature as both creative and constrained, for example, by the physical environment

or by constitutional, institutional and organisational factors as well as those in the form of cultural mores and social conventions. And, ontologically, where social realities may be negotiated according to both variant and relatively immutable practices. Firstly, within a structural analysis, at some point it is necessary to pursue actors' views of their social world and how they make sense of the phenomenon of change - are changes threatening, within or outside their control? Secondly, research strategy and design must incorporate a systematic protocol in order to expose elements of both regularity and variance.

To summarise. Within the family of disciplines which constitute social science, the diversity of research strategies and methodological instruments fulfil a collective purpose. Social scientists exercise related sets of assumptions about social life in the thinking and planning of research strategies. The strategy planned for this research was based on the premise that in order to explain the nature of a social event, it is necessary to understand actors', possibly different, subjective interpretations of the reality of that event.

A further assumption was that individual actor's subjective interpretations could indeed be understood because the process of negotiating reality is founded on a body of shared common-sense knowledge and meanings. At the same time it was not assumed that this could be transferred in its entirety from one context to another, to the extent that understanding actors' subjective

interpretations of reality depends on appreciating the meaning of, that is making intelligible, certain situated particulars of different contexts. This was the conceptual framework underlying the subjectivist emphasis of this research.

From a broad remit 'new technology and work organisation', the research was designed to address different areas of theory and a number of substantive technology-related issues at different levels of analysis. It was also designed to be of practical value to participants.

3.3 FURTHER THEORETICAL AND PRACTICAL CONSIDERATIONS INFLUENCING RESEARCH STRATEGY AND DESIGN

Professional Work Organisation

Since the issues addressed in this research were extensive and to be consistent with the primary subjectivist emphasis, it was felt more appropriate to concentrate on one profession than attempt to draw several into the study. This, of course, subjects any eventual theoretical conclusions concerning 'the professions' to some qualification although this is partly offset by the cross-national comparison. Moreover, substantive heterogeneity within one profession would still run counter to certain premises in current macro theorising. It may be, as Freidson (1979) suggested, that we have to abandon existing paradigms and construct an innovative analytical framework.

Accountancy was selected as the example of a profession for a number of reasons.

(i) It is a well established, commonly recognised and self-proclaimed profession, regulated and controlled in Britain by a number of professional bodies: though alterations to the present situation have been mooted for some time, for example, revising training curricula (Julien 1979, Gleeson 1979, Carey 1981, ICMA 1983); criticism of professional ethical practice (The Times 25 August 1977); the possibility of State regulation of the profession (Solomans 1978); changes in the provisions for disclosure of auditing information to be incorporated in the

imminent Financial Services Bill which may partly reflect the increasing vulnerability to litigation (Hellier 1985); structural change in the work of practising firms such that now only between 30-60 per cent of fee income is generated from auditing, this has galvanised the competitive edge (Barber 1984) and possibly encouraged the advent of advertising.

(ii) In Britain however, accountancy is hardly an homogenous profession. It is differentiated by regulatory bodies, qualification mechanisms, status and occupational role. That these segmented members share a common social and occupational identity must be a highly contentious assumption.

Chartered accountants have historically maintained the most prestigious position. Nowadays more than 50 per cent move into industry where, it has been claimed, they often assume the top jobs and are regularly invited to join Government advisory and Select Committees (ICAEW 1966). However, more recent empirical research has suggested that within industry the industrially trained accountant is gaining favour (Powell 1984).

(iii) Within industry, there are further arguments that autonomy and exercise of conceptual skills is largely the prerogative of senior accountants rather than those nearer the bottom of organisational hierarchies (Lengerman 1969, Armstrong 1984). Thus this research could usefully investigate differential effects of technical change corresponding to hierarchical position.

(iv) Lengerman (1969) also found that American certified public accountants generally exhibited a relatively low level of concern for professional autonomy and involvement in professional activities (also Briloff 1977). In Britain the absence of value and interest dissensus between professionals, including accountants, and management has also been documented (Hastings and Hinings 1970, Hopper 1978, Child 1981, Powell 1984).

(v) Accountancy occupies a central role in the management of the business world. Accountants are ubiquitous, thus maximising the potential in the research sample for variability across industries and through firms' hierarchies. Gaining access to large corporations would also offer the possibility of studying situations at the forefront of development and utilisation of microelectronic technology.

(vi) The development of accountancy work has followed the fortunes and capitalised on the misfortunes of the economy (Jones 1981): in business organisations it has historically been a function of new structural forms (Johnson H 1980), and since "*modern accountancy is the creature of corporate business*" (Johnson 1976:48), the impact of information technology on the work of accountants in industry might be expected to indicate industrial, and by implication, other economic and social trends. The cross-national dimension is expected to clarify whether these trends and the socio-economic role of accountancy are common to all capitalist societies.

(vii) As a numerically oriented occupation, accountancy and its composite work tasks may be highly susceptible to computerisation. Certainly the inauguration of computers within business organisations was primarily within accounting departments and much routine work previously done manually is now computerised. However, this does not necessarily mean that these routine activities are or ever were performed by accountants. So in any evaluation of routinisation and possibly associated deskilling, a distinction must be made between accountancy work and accountants' work. Although as Montaga (1968) observed, accountants sought new areas of expertise as the old ones became routinised (also Flint 1980).

In Britain the annexation of new skills or reskilling was more recently highlighted in Powell's (1984) findings but an important consideration is the vast variation in how accounting work is organised and how accountants' jobs are defined (Burchell et al 1980, Otley 1980).

The Cross-National Comparison

The objective of incorporating a cross-national dimension was to contextualise the British situation. More specifically, to establish whether (a) any nationally oriented attitudinal factors might be indicative of particularistic values; (b) any nationally oriented institutional influences might be manifest in

accountants' work roles and tasks; (c) national influences mediate the effect of technical change on work organisation.

West Germany was selected as the comparative country because of certain similarities with and differences to Britain.

(i) Both countries are mature Western democracies and member countries of the European Economic Community. Within the ECC pressure has progressively increased for harmonisation throughout Europe of firms' financial reporting (Bartholomew 1979) and an international code of practising ethics for auditors (IFAC 1979). From this, some professional exchange of ideas and increasing international awareness of existing differences might reasonably be expected.

(ii) Both countries exhibit a comparative industrial structure and are at a parallel stage of industrial and technological development.

(iii) Both countries are similarly dependent on competitive international trade though West Germany possesses fewer indigenous mineral resources which may increase the importance of manufacturing industry as the source of wealth creation.

(iv) Both countries are mixed economies, certainly capitalist in terms of the critical perspective and this is an important parallel.

(v) There are considerable historical differences between the countries in social, economic, political and institutional development and in the nature and speed of industrialisation processes.

(vi) There is no linguistic equivalent for the British word 'profession'. The German word 'Beruf' combines ideas of skill and occupation (Fores and Glover 1978). The Beruf is acquired through the State education system [f] which has a stronger vocational bias than in Britain. Education in West Germany is perceived as the principal mechanism through which individuals may achieve a self-reliant and vocationally satisfying life (van Bernem 1978).

Thus overtly, there appears to be an absence in West Germany of the status differential implied in the British distinction between occupation and profession. Nevertheless (Lafferty 1975:72) observed that German Wirtschaftsprüfer (auditors) enjoy relatively high occupational status on a par with lawyers and ranked as one of the *"legally bound liberal professions"*

(vii) There are substantial differences between the two countries in the organisation and operation of the accountancy profession. It is not segmented in West Germany and the conditions surrounding entry to the profession would seem to bear little resemblance to the British situation (Oldham 1975).

f There is no British-type system of private or public education in West Germany,

(viii) There is evidence which suggests culturally related differences between the two countries in the structure and conduct of industrial organisations. For example, in German firms there appears to be more emphasis on hierarchical position and less delegated autonomy or authority; decision making tends to be more centralised, management control is tighter, more detailed and concentrated at the top (Horovitz 1978): Warner (1984a:101) has reported a *"consistently held view in Britain that CNC [Computer Numerically Controlled - machine tools] results in 'operator deskilling'. This is not a view shared by German firms."*

In Britain financial control is important and sophisticated whereas the primary functional emphasis in Germany is production and often there is no separate department for planning, the controller is responsible for long range planning, budgeting and controlling at the corporate level. The overall impression of German firms is one of functional specialism and *"is not one of flexibility but of operational efficiency"* (Horovitz 1978:19, also Child and Kieser 1977, Budde et al 1982). Moreover many of these organisational aspects are prefaced by distinctive characteristics of institutionalised education systems (Lutz 1981).

Technical Change

There were three basic issues concerning the nature of technology.

(i) Whether qualitative parallels could be drawn between earlier and new microelectronic technologies. These latter possess

different capabilities and may be utilised in different regimes. Recent empirical studies of computer aided manufacturing (for example, Buchanan 1986) suggest that this technology could be used in a way which enhances the cognitive skills of operatives: and cross-national investigations (for example, Sorge et al 1983) have led to the conclusion that the

"....degree to which skills are affected depends on the socio-technical tradition of the respective national-work culture, and that the manpower consequences must be seen in their societal context."

(Warner 1984b:5)

Within areas of computer aided administration, managements may find it expedient to capitalise on this manpower potential, especially for the higher paid employees.

(ii) Whether new technologies afford capital greater control over the labour process. This, as contended by numerous analysts, was the primary motive underlying earlier modes of technical change. However, Noble (1979:44) has provided a lucid illustration of the enhanced importance of an operator's decision making skills in computer aided machine tool production. The inflated expense of systems malfunction may mean that management is more rather than less reliant on operatives' integrity.

Within administration, clearly computers process information more rapidly than human beings but, to parody Noble, what does an employee do when he receives information he knows by experience is

not correct. Does he begin the tedious process of finding out from where the mistake originated or does he turn to his on-line terminal and key the information into a database thinking to himself 'they'll have fun sorting that out at month-end'. Moreover, processed information still has to be evaluated and decisions made on the basis of these evaluations. As yet it is unlikely that computers fulfil this function.

(iii) Whether computer aided administration constitutes a uniform hardware and software system consistently utilised in the same manner with no differential effects on work organisation. This is improbable, hence a pre-requisite of research design is variability of research locations and organisational positions.

3.4 OPERATIONALISED DEFINITIONS

Culture

This follows the Kroeber and Parsons (1958:553) concept, culture is taken to be the *"transmitted and created content and patterns of values, ideas and other symbolic-meaningful systems as factors in the shaping of human behaviour and the artifacts produced through behaviour"*.

Accountant

The initial definition of an accountant was an organisational employee possessing a final accountancy qualification from any officially recognised authority in each country. However, as the reader will note (in Chapter Four), under this definition none of the West German respondents were accountants, thus references to accountants were replaced by 'finance personnel'.

Technology

There is no single definition of technology (Scott 1975) and *"not even a recognised definition of microelectronics as against other electronics"* (Sorge 1981:3). Technology here refers to the application of scientific knowledge manifest in the form of 'operative machinery'. Basically that which Winner (1974) has identified as 'apparatus' but this narrow definition must extend beyond what immediately *"can be seen, touched and heard"* (Fox 1974b:1), since a computer or visual display unit cannot operate without relevant software or some form of communicating medium -

neither of which are necessarily observable. Technology then, applies to hardware, software and the linking of computers and telecommunications as found in situ.

Work Tasks

A work task refers to a requisite set of physical and mental actions necessary for an employee to complete a unit of work which has specific boundaries. A task is one element of what an employee does as a job. An employee's job comprises sets of interrelated tasks possibly prescribed in general terms by job descriptions.

Work Role

A work role refers to an employee's function within the organisation and corresponding position in the organisational structure relative to other employees. To role attaches such aspects as degrees of autonomy and types of responsibilities. In effect role is what an employee is in the organisation.

Work organisation

This is perceived as a systematised and co-ordinated activity, including the structure of co-ordination and division of labour, where certain knowledge and skills are applied in the form of technique. This technique may either involve direct utilisation of computer technology or using information output following utilisation of the technology elsewhere.

Technological Change

This is change in any aspect of the technology.

Technical Change

This relates to changes in technology and associated changes in work organisation. For example,

(i) work tasks - where tasks fulfil essentially the same function but have altered in technique or content such as the conceptual or judgemental components. Also where former work tasks no longer exist or where they have been replaced by new tasks;

(ii) work roles - where there have been alterations in employees' positions and functions within the organisation. Here might include the removal of former and/or acquisition of new areas of responsibility;

(iii) organisational profiles - where there has been major organisational re-structuring which might include changes in job descriptions, tasks, roles, demarcation boundaries, co-ordination, communication and reporting networks. This re-structuring may or may not have involved programmes of job re-design and corresponding re-training.

3.5 SUMMARY OF RESEARCH OBJECTIVES, STRATEGY, DESIGN AND METHODOLOGY

Objectives

(i) To systematically analyse and explain the nature of the relationship between technological change and the work of hierarchically and functionally differentiated finance personnel within economic organisations in national settings across a range of industries.

(ii) To conduct the study in two politically, economically and industrially similar countries in order to assess any culturally related differences which may influence the effect of technical change and professional work within industrial companies.

Strategy

The research strategy was primarily subjectivist conducted in the form of a number of case studies. No a priori hypotheses were formalised but it was assumed that changes in work organisation could be associated with changes in technology and that these changes could further be related to specific contexts. Any theoretical perspectives generated would be empirically grounded.

There were four complementary characteristics of the research strategy.

(i) Ideographic - research focused on the changing work situation of one organisationally employed profession within national settings.

(ii) Nomothetic - the same investigation was replicated across a range of different industries and the same industries in two countries.

(iii) Ideational - primary data comprised respondents attitudes, opinions, aspirations, experiences etc.

(iv) Institutional - analyses of the organisation and operation of the relevant national institutions.

Design

Originally the intention was to gain access to five British owned and five German owned corporate enterprises, cross-nationally paired according to type of industry. Research would have been conducted at comparative locations within each enterprise in both countries. However, in the time available it proved impossible to identify a sufficient number of German corporations with comparative business operations in Britain. There would also have been logistical problems associated with conducting the research according to the defined protocol simultaneously in both countries.

For these reasons the design was modified to include only British owned Public Limited Companies and, with the exception of the corporate head quarters which was sited only in Britain, research

was conducted within each corporation at comparative locations in both countries. Whilst this precluded the comparison of indigenous firms across the two countries, it was arguably a more appropriate research design for isolating possible cultural influences since, with factors other than country held constant, any recurring differences between the two countries would be clearer. The robustness of the cross-nationally paired sample companies was defined by (a) common corporate parent ownership; (b) involvement in the same type of business activity; (c) similar size in terms of turnover and employees. (See Section 3.7 for the comparative features of each of the cross-nationally matched pairs of companies.)

Access was gained to nine corporations with the addition of two public sector organisations in order to extend the study to public finance accountants in Britain. Various constraints eventually precluded the inclusion of the public sector in West Germany, especially the time required for a feature outside the central remit of the study.

Research was undertaken within corporate enterprises at three different structural levels in Britain and two in West Germany. Firstly, corporate head quarters which would be involved in consolidating financial results and possibly monitoring the performance of world wide operations. Although it was necessary to investigate the employment situations of corporate finance managers, since here there would be no comparative level in West

Germany, the importance of securing the initial point of entry at the corporate apex was, firstly (a) acquisition of valuable background information such as structural changes and the operating relationships within the corporate entity, the historical and current trading climate, strategic policies, if any, related to technological change; (b) gaining some insight into the ambience of enterprises which reflected, for instance, in the nature of policies and individuals; (c) facilitating access, within the corporation, to a constituent company with a matching counterpart in West Germany.

Secondly, the head office of a cross-nationally comparative company, subsidiary, division or business within the corporation which may or may not have had some form of direct authority over the West German counterpart.

Finally, a constituent operating site of the company where any form of direct authority or even communication with the West Germany site was less likely. It was at this level which was expected, both organisationally and operationally, to provide the most robust cross-national comparison since organisational and social distances would be furthest and hence contrasts would be clearer. Thus research in Britain was concentrated at this level. However, in West Germany it became clear that this emphasis was not appropriate because (a) the head office and operating site more often shared the same geographical location; (b) where the head office and operating site were geographically distant, more

of the accounting work and information processing facilities were centralised at head offices than was the case in Britain.

At industrial locations in both countries, the research design incorporated respondents from non-finance functions (for example, computing, personnel, production) in order to widen the perspective on technical change and the work of finance personnel. Also included were interviews with representatives of the four major accountancy bodies in Britain and the Wirtschaftsprüferkammer (Chamber of Auditors) in West Germany. These interviews covered a range of subjects as did those with three accountancy practitioners, one located in a large provincial office and one in a London head office and one in the West German head office of the same large firm.

Methodology

"....the more a line of enquiry employs formally sophisticated variables and uses quantitative, in particular more complex statistical analyses, the more it is likely that research results from one country are assumed to be valid in other countries, and the more is the explanatory value of variables like size, technology, and the structure of the task environment stressed. Conversely, it is likely that the importance of culture is played down."

(Sorge 1977:57)

Following the problems associated with investigating the influence of culture using quantitative techniques and the appraisal of the social science dimension (Section 3.2), here the primarily subjectivist research strategy required an in-depth method which

would elicit rich, qualitative data. These data were derived from content analyses of tape-recorded, in-depth, semi-structured interviews. The reader may wish to refer to Appendix 1 where copies of the interview schedules are given.

A further requirement was for supporting information related to organisations and national institutions, These data were derived from analyses of secondary documentary sources, for example, academic and professional literature, specialist journals, newspaper and other media features, archives, minutes of meetings, firms' accounts, organisation charts and policy documents, information systems flowcharts, technical and other reports.

3.6 SELECTION OF THE SAMPLE

British owned corporations with operating activities in West Germany were identified from a number of data sources such as published accounts, Department of Industry material, Financial Times surveys. Of the initial twenty introductory letters sent to main board finance directors, there were,

non-responses	four
negative responses	seven
affirmative responses	nine

Of these nine, three were later found to operate on too small a scale in West Germany to afford a reasonable comparison. Whilst research was progressing within the initial six corporations, a further ten introductory letters sent to main board finance directors elicited,

non-responses	four
negative responses	three
affirmative responses	three

These additional three firms increased the final sample to nine corporations, all of which (by turnover) were within the top forty British companies. Although the intention had been not to include sunrise industries, Corporation V (the computer company) was an interesting case study partly because it was a computer

manufacturer and partly because it was a single company entity which may have revealed operational differences. For these reasons this corporation was included in the sample and, although the West German business was not a manufacturing but solely a sales and distribution operation, since it exhibited a finance function and was comparable with one of the British research locations (a regional sales area office), it was considered a suitable cross-national comparison.

Within the other eight corporations, the selection of a suitable constituent company was accomplished through negotiation at corporate head quarters. The principal criteria for the pairing of companies cross-nationally were that business activity was identical and, where possible, size was comparative. The former was achieved in all cases although one of the West German businesses (Organisation IV) was not a total company entity but basically a production operation. Nevertheless, since it comprised a sizeable finance function and was functionally comparable to the British factory site, it was included in the cross-national comparison. In another case study (Organisation IX), after completion of the research at the British sites, it was revealed that the West German operation comprised only a selling and distribution operation for which all the financial functions were conducted by the Dutch business. In this case, research visits were confined to the Dutch site. The manner in which this cross-national comparison was incorporated into the interpretation of the results is explained in Section 3.9 of this chapter. In

only one instance (Organisation VIII) was company size by turnover directly cross-nationally comparable: in the other eight companies the British operations were larger. The following section summarises the comparative features of the cross-nationally matched pairs of companies.

It was hoped that the sample would be drawn from a wide range of variable industries. With the exception of two companies (Organisations I and VI) involved in the downstream oil business, other activities included industrial paints, brewing, general chemicals, computers, music, fast moving consumer goods and lithographics.

The selection of suitable respondents within companies was also achieved through a process of negotiation at company head office and operating site levels. Here the principal criteria were that the total sample should include functionally differentiated finance personnel and, within specific companies, respondents should occupy identical or similar organisational positions in their respective countries. In some cases this was achieved but more often not possible owing to cross-national differences in company size and organisational structuring. The study as a whole disregarded the highly specialised aspects of finance, for example treasury, concentrating instead on the more ubiquitous areas of financial and management accounting common to finance functions at all levels.

There was no pre-defined geographical area within each country, this was dependent upon where comparative business operations happened to be located. Nor was any attempt made to stratify the selection of respondents according to, say, age or years of service because the aim was to accommodate as much variability as possible.

In order to broaden the perspective on roles of finance personnel, particularly those with managerial status, respondents were also drawn from clerical levels and from functions such as personnel, production, engineering and purchasing. Computer personnel were also included because of their knowledge in general and more specific areas of technological development.

In addition to the core sample of industrial employees, access was requested and granted to three ancilliary sectors. Firstly, single site research was conducted within a Greater London Borough Council and a Regional Health Authority primarily to investigate the peculiarities of public finance accounting in Britain. The possibility of following up this sectoral research in West Germany was held open but eventually disregarded owing to the restrictions of time and the additional volume of documentation this would incur. Secondly, discussions were held with representatives of the four main English accountancy institutes and the Wirtschaftsprüferkammer in West Germany. Thirdly, the same large firm of accountancy practitioners in Britain and West Germany also participated in the research.

CONSTITUENT RESPONDENTS OF THE RESEARCH SAMPLE

COUNTRY	<u>UNITED KINGDOM</u>		<u>WEST GERMANY</u>	
	<u>Industrial</u>	<u>Non industrial</u>	<u>Industrial</u>	<u>Non industrial</u>
Respondents				
Finance	62	21	38	2
Non-Finance	12		12	
Total of Comparative Respondents in UK + WG	74		50	
Others		21		2
Total Respondents				147

Table 3.1

3.7 COMPARATIVE FEATURES OF THE CROSS-NATIONALLY MATCHED PAIRS OF COMPANIES

<u>ORGANISATIONS</u>	I	II	III	IV	V	VI	VII	VIII	IX
<u>CROSS-NATIONAL FEATURES</u>									
Same corporate parent	Y	Y	Y	Y	Y	Y	Y	Y	Y
Same type of business activity	Y	Y	Y	Y	Y	Y	Y	Y	Y
Same size (1)	Y	N	N	Y	N	Y	N	Y	N
Same degree of operating autonomy in each country (2)	Y	N	N	N	N	Y	Y	Y	N
Same configurations of research sites in both countries	Y	N	N	Y	N	Y	N	Y	Y
Same autonomous responsibility for computer systems development	Y	Y	Y	N	N	Y	Y	Y	N

Table 3.2

Y = Yes: N = No.

(1) There was considerable variability (see Appendix 2 and Table 5.1) in annual sales turnover between the cross-nationally paired companies; between companies within Britain; and between companies within West Germany. Company size here in both countries relates to small (less than 100 employees); medium (100-500 employees); large (more than 500 employees). Using these definitions, all companies in Britain except Organisation IX were large whilst some in West Germany were medium (II, III and possibly VII) or small (V and IX).

(2) Degree of operating autonomy here refers to strategic policy and decision making responsibility. All the British companies appeared to enjoy considerable autonomy from the corporate parent whilst the autonomy of some of the West German subsidiaries was circumscribed by the British company (see Chapter 5.3.1).

3.8 THE CONDUCT OF THE RESEARCH

Prior to formally submitting my First Annual Report and embarking on the research proper, I considered it would be beneficial, if not prudent, to undertake a pilot study. For this, there were three main reasons, (a) to familiarise myself with interviewing etiquette and dispel any feelings of nervousness; (b) to dry run my interview schedules in order to ensure my questions could be easily understood and made sense to respondents; (c) to explore any areas of investigation which respondents felt important but which I may have omitted. Through personal contacts, I gained access to three sites following my requests to informally interview several finance employees. These interviews were not tape-recorded, instead I relied on note-taking to later remind myself of the general schema of technical change and of particular issues raised. I became aware that a tape recorder was an indispensable piece of equipment.

For the formal research I felt I was more likely to encourage corporate participation by ensuring that the initial introductory letters sent to main board finance directors were straightforward and limited to one sheet of A4 paper with an attached affirmation from my supervisor. I followed a formula which (a) stated the research project and its main objective; (b) the reason for specific interest in that business; (c) a request for a short appointment to discuss research access; and (d) an assurance of complete confidentiality. As an incentive to participate, I also

included an offer to investigate any particular issue on behalf of the company but this was not taken up by any of the corporate respondents.

Responses were very varied, all except one coming from a person different to whom the letter was addressed. Some arrived quickly, one arrived about four months later. Some were curt or apologetic refusals, others were interested but non-committal, others enthusiastic. Wherever there appeared a possibility of participation, I followed up immediately as suggested in the reply, usually to 'telephone my office' or 'my secretary'. I do believe that first impressions are important, so I conducted these initial telephone calls, according to clues I received from the manner of speaking, largely intonation in the voice. For example, if my name was recognised immediately and the manner was formal, I responded in like fashion and kept strictly to the point without wasting any time. If the manner was friendly and informal such as being called by my christian name, I began to establish a rapport, say, by noting the locality of an accent and saying something like 'that's one place I've always wanted to visit' or 'I had a wonderful time when I went there'. And always ended the conversation with an expression of gratitude and, if I was speaking to a respondent, 'I look forward to meeting you on such and such a date'.

In preparation for the forthcoming interviews I felt it was necessary not only to appear presentable but also to present an

image with which my respondents would identify on the basis that they were more likely to talk freely to one of the same kind. So I bought a good quality leather briefcase, a tailor-made formal business suit and plain accessories.

Until the first appointment (with the Group Financial Controller of Corporation II) I had assumed that my request for a short appointment solely to discuss research access would be taken literally and probably last about 15 minutes. So on this first occasion I did not take a tape recorder but the conversation lasted almost two hours, during which time it became evident that the affirmative response to a 'short appointment' was actually an affirmative response to participate in the research and that this had been the first interview which I had failed to record. The same situation arose in eight of the nine initial conversations but, following that first experience, I always took my tape recorder and many more blank tapes than I thought I would need. I was, thus, able to capture all the data when this 'short appointment' unfolded as a six-hour interview. This happened on several occasions but from the very early stages I realised that individuals often welcome the opportunity to talk at length and in-depth about themselves, their experiences, their work, their company and their ideas on a broader intellectual or current affairs level.

From this I learnt one principal lesson. Never to underestimate the willingness of respondents to share their subjective

interpretations of reality and of companies to allow them to do so. Thus, I allowed plenty of time for each interview and normally enquired at the beginning how much time my respondents could afford. This gave me a frame within which to work and to assess how deeply and extensively I could probe issues as the interview progressed. The first few minutes I felt were crucial. I soon learnt to master the art of the warm handshake - particularly firm in West Germany - and became very sensitive to keys to respondents' personalities and states of mind, say, in the manner of speaking, sitting, looking at me directly or not, other mannerisms, the amount of smiling, laughing or humorous comments. (This was, incidentally, the only form of observation I employed.) My ongoing assessment of all the verbal and non-verbal signals led me to adopt a particular stance in the way I approached and probed an issue. Whether, for example, I was indirect, cautious, matter-of-fact, sympathetic, revealed my own ideas as a prompt, even challenging or disagreeing on the basis of a personal opinion or verbal/documentary evidence from another source.

I usually requested a minimum of one hour for each interview, on a few occasions this was not possible but in the vast majority of cases time allowances were more generous. Notwithstanding the restrictions of time, if I felt a particular description of an event, an opinion, an experience or an observation required further clarification, contextualisation or exploration (especially if it was novel), then I continued on this the theme sometimes at the expense of obtaining insufficient data related to

another scheduled question. I felt, and still feel, that the benefits accruing to the developmental process of the research, and certainly to my own learning process, outweighed the costs of a few missing data.

The reader may already suspect one major effect of the strategic approach to the research which placed a higher priority on flexibility than structure within the interview situation. I intended the initial emphasis of the project to focus on technical change and work organisation, the cross-national comparison was a secondary feature. However, even in the first phase in Britain as I allowed respondents to diverge from the scheduled questions, I began to collect evidence of the cross-national differences in the persona and image of industrial accounting and auditing practices. By the time I arrived in West Germany I realised that I would have to pursue questions of cross-national differences which, as the reader can see from Appendix 1, were not originally part of the interview schedules. Fortunately, because the West German respondents were working in subsidiaries of British companies, they were aware of and could articulate the differences between certain British and West German ways of doing things.

Nevertheless, after the empiricial work, many months of sifting through the mass of raw data and the documentary sources were required before two coherent, compelling and different pictures of the two societies emerged. At the end of this process, my subjective interpretation of the reality of British society had

changed considerably and, correspondingly, so had my construction of this thesis. The initial emphasis was then the cross-national context. This became the underlying interpretive theme throughout, and within which the findings and arguments were embedded. Finally, I changed the title from the original 'A Cross-National Study of New Technology and the Work of Industrial Accountants'.

Another advantage, I felt, of placing a high priority on flexibility within interviews was that the more I allowed respondents to answer questions freely, the more I learnt about them as individuals and, thus, the easier it became for me to adopt a stance with which they could feel at ease and trust me as an individual doing a job without a political axe to grind. I was delighted to be told several times that 'you must be good at this because I don't normally say very much'.

A further element which I felt to be important was that if the subject of study is related to wider political, industrial or economic issues, it was essential that as a social scientist I was aware of and could discuss what was happening in these areas. I found that whilst discussions on a broader level ostensibly tended to divert attention from internal company problems, often the existence of these problems would be brought to light by respondents as illustrations of what they felt was happening on a broader level. It was in this area that I utilised much documentary material to keep myself informed of company events, of

issues on a wider scale and to assess the judgements of my respondents.

Contrary to what I had been prepared to expect, respondents did not appear to be inhibited by or suspicious of the presence of my tape recorder. Indeed I was generally surprised by the frankness with which they expressed their opinions, though perhaps I aided the process of disclosure by buying a very compact, unobtrusive and easy-to-operate tape recorder. There were occasions, of course, when I was asked to 'switch it off for a minute', to which I always replied 'certainly' but usually managed to first make a comment as an prompt for remembering what had been said when later transcribing the interview.

Apart from the interview situation, from the outset I suspected that much valuable data could be collected in less formal atmospheres such as over lunch or 'seminars in the pub after work'. So I never refused such invitations partly because I believe a committed social scientist must be inherently interested in people and willing and able to ask intelligent questions outside the formal arena, focusing instead perhaps on individuals' personal aims, anxieties or interests, (about secret ambitions, family problems, pigeon fancying or the novels of Böll, for instance): and partly because showing this inherent interest inspires the confidence and trust which encourages respondents to divulge highly privileged information. For example, after a long conversation over lunch about French red wine and the stresses

related to frequent business-related travel, respondent 2 in Organisation IV began to perceive me as a confidante. I was the beneficiary of several 'off the record' telephone calls during which I learnt what was 'really' happening within the company including the political processes of technical change or planned redundancies - even before the unfortunate individuals concerned.

On another occasion I was pleased to accept an invitation to the usual after-work-pub-seminar with members of Organisation II. Here I learnt that one main reason for promoting an unqualified accountant to the position of Finance Director was that the individual concerned had been identified by the incoming Chief Executive as the 'Godfather of the local Mafia', thus he had to be brought into the senior management where he would be less disruptive. I received copies of confidential company reports from members of this informal network and gleaned more information about the head office management of this company by being invited to dine with the German Finance Director and his charming family. Through the development of such relationships I feel I have learnt far more about what really happens within companies and countries. This has encouraged my support of a cultural perspective and confirmed my social scientific posture as basically Weberian, though I feel there is a need to develop this framework alongside the discernable changes in the manner in which actors relate to each other in everyday life, say, in the case of changing gender role expectations.

Another advantage of developing more informal relationships with respondents was the ease with which I could re-establish contact at a later date either to enquire about information which had not been available during my research visits or to follow-up a particular event. In some cases respondents re-established contact with me, I give an illustration in Chapter Ten of the sort of information I was, and still am, privy to.

I believe I was fortunate to interview so many irrepressible respondents but on two occasions I sensed a good deal of initial tension in the individuals. Although at the outset I did not know the source of the tension, I handled the situations by following my, by this time well developed, instincts. The first interview was with a British, late-middle-aged, female clerk whose nervousness immediately made me change my opening tactic of explaining the background to my research. Instead I talked about the locality, asked how long she had lived there, mentioned the houses and gardens looked well kept. When she told me she was a keen gardener, she gave me the foothold I needed because I was able to turn the discussion to (someone she could identify with) my mother, her keen interest in gardening, her retirement and my close relationship with her. This, as I hoped, encouraged a perception of me as a daughter rather than a university researcher to be wary of. And I was able to bring the conversation back to my research by saying how pleased and proud my mother was that her daughter would one day be called a doctor, partly because she herself had never had such opportunities. At the end of interview

she actually thanked me for talking to her and explained that she had been worried initially because she could not understand why anyone would want to talk to her, what sort of assistance could she possibly provide?

The second interview was with a German, middle-aged, male clerk who immediately launched into a bitter attack on new technology.

"Technology isn't needed in this part, a calculator or a 'phone but nothing else, if it would be necessary, it's not good because it would be easier for the people to work."

(Respondent 11, WG Organisation VI)

Here I sensed that the source of anxiety may be related to a fear of displacement and that if I failed to take his mind off the subject of technology I would also fail to understand his interpretation of the reality of new technology in his workplace. So I cut in rather sharply suggesting that we may come back to that subject but I was 'really' more interested in West Germany. I was enjoying my visit so much, I had already noticed many differences between the two countries, had he ever been to England? "No". So he had spent his whole life in West Germany, if I could ask then about his background and so on. When this topic had been exhausted, I again picked up the theme of cross-national differences by describing my visit to the British refinery, it was older, slightly larger but produced a lot of different chemicals etc, and slowly introduced the developments in technical change I had found in Britain. Were they similar here?

How had his work or the business changed in the past few years?
Towards the end of the interview, his opinions on new technology were markedly different from those he had originally expressed.

Q. *Do you think it might be useful for you to have a terminal?*

A. *Oh I think so....we take quantities by hand and write down and calculate all the facts by hand.*

Q. *And you think it would be quicker if you had a terminal?*

A. *Yes, because these informations exist already, we need only to take them like that.*

Q. *And do you think it would be better?*

A. *It would be better, it would save writing from one place to another but otherwise we are three persons and that's the other side [unfunny laugh]. It may be that half a person can do other things or can go adieu. But I must get the interests of the company in this thing.*

Q. *Do you mean that you would like to use a terminal?*

A. *Yes.*

Q. *To be able to use it?*

A. *Yes.*

Q. *And the risk if there's one less person?*

A. *We bear that risk.*

After every research visit I wrote a letter to my principal contact expressing my gratitude, indicating how interesting and profitable the experience had been for me and asking for my thanks to be conveyed to all respondents. This I felt was a matter of common courtesy.

Finally, I strongly believe that academic sociology has a duty to disseminate research findings in a way which contributors to those findings can understand and appreciate. I wrote a number of reports for participants, drawing attention to generalities both in Britain and West Germany and to specific situations within each individual company. As a sequel to probably my most critical report (sent to Organisation VI in Britain), I was invited to give a verbal presentation at the head office to senior management from various sites in Britain. I must assume that this presentation was well received since I was asked to return to give a similar presentation to a group of middle managers. Whilst refusing to take any payment except travel expenses, I was delighted to receive a lavish bouquet of flowers following both occasions.

3.9 INTERPRETATION AND PRESENTATION OF THE FINDINGS

Working within a subjectivist, interpretive paradigm of the social world is taken here to imply that (a) a reality exists only insofar as human beings perceive that reality to exist and (b) the subjective interpretation of reality of one actor is no less meaningful simply because it is advanced by a single actor rather than by several who happen to agree on an interpretation of a particular reality. This does, however, pose two basic problems related to the interpretation and presentation of research findings which, in this case, must fulfill doctoral criteria.

Firstly, there is the issue of an apparently 'objective' finding, though here the preferred term is 'concrete' (because the latter is taken to refer to a shared reality of meaning whilst the former is taken to mean that there can be no other reality which is clearly opposed to the cognitive position of the writer). Take, for example, evidence which seems unequivocally to illustrate technological displacement in terms of the numerically reduced number of employees in a particular department after the implementation of a computer system. The conceptual approach of this research would not accept this concrete finding unless, on the one hand, the displaced employees actually interpreted their experience as one of displacement: whereas for instance, some may have been re-trained and re-located to another department or site and thus interpret their experience not as displacement but movement perhaps even to a more satisfying job.

On the other hand, those displaced from the particular department, company or perhaps even an economic sector may not yet interpret their experience as displacement. Their interpretation may be one of release from degrading work together with the development of previously unrealised potential if, say, they have undertaken government training schemes, acquired new skills and subsequently established their own businesses.

Apropos of interpreted realities, it is recognised that a tension exists between drawing conclusions from apparently concrete findings, such as displacement, without full access to those individuals displaced which was not possible in this study.

Chapter Eight in particular discusses findings related to displacement (and deskilling) without (all) the evidence of those directly affected. This does not represent a suspension of the conceptual framework but, rather, the tension between a subjectivist, interpretive position and the utilisation of seemingly concrete measurements (from which general conclusions have been drawn) is overcome by qualifying this discussion as related to the same parameters in the specific context of a cross-national comparison. The utilisation of reported numbers of displaced employees is not, then, held in any way to be indicative of the interpretation, and thus the reality, of displacement by those displaced but it is of contingent importance because these reports, related to the same seemingly concrete feature, differed between the two countries and this was not a 'stand-alone'

difference. It was integral to other cross-national differences, for example, the differing nature of training, work experience and quality of work routinely undertaken by ostensibly similar incumbents in Britain and West Germany, and here the evidence was collected from respondents own interpreted realities of their work.

Further, in both countries, the discussion of deskilling largely relies not on the testimony of those supposedly deskilled but, on the testimony of those in managerial positions who had witnessed or experienced technical change and, either consciously or unconsciously, articulated features of this process as having deskilled the work of subordinates. Again, whilst the subjective realities of those apparently deskilled were not accessible, a cross-national parameter was maintained from which emerged evidence of cross-national differences in the propensities of technological deskilling: again these differences were not isolated, but consistent with other cross-national differences evidenced from respondents subjective realities.

The second problem of data interpretation and presentation arising from a subjectivist, interpretive perspective concerns the integration of subjective realities which appear to be isolated or unique. From the outset, of course, approaching the same research topics will elicit a range, but not an infinite range, of responses from different actors. Moreover, bearing in mind that in order to achieve the objective of isolating possible cultural

influences, this research was required to elicit substantive, which means consistent, evidence. Data interpretation, therefore, focused on the consistencies which are presented in this thesis. That is not to say that respondents' idiosyncratic experiences or circumstances did not exist or were not meaningful, they did and they were, but merely that these were not as important and could not be incorporated as consistencies as the findings unfolded and had to be documented as such in order to sustain arguments related to cultural issues of considerable complexity.

A case in point here was the Dutch Organisation IX, given that the choice was either to include a non-German but also a non-British company or fail to make any cross-national comparison and thus 'waste' the British research data, it was decided to incorporate the Dutch site. There were many apparent differences indicated by the Dutch respondents compared to both their German and British counterparts in what might generally be identified as norms of thinking (Exhibit 3a below, in humorous tone, illustrates such). But, clearly, it was impossible to add a second cross-national comparative dimension on the basis of one sample company. Thus, the interpretation of data from the Dutch Organisation IX focused on the differences compared to the British parent and have been presented largely where they coincide as similar to the German context.

Exhibit 3a

Two cross-national dimensions!

"When you do business with Germans, you get the quality and everything arrives exactly on time, they are reliable. With the Dutch, you get the quality but nothing arrives on time, they are not so reliable. But the British, they just tell lies."

(Respondent 1, Dutch Organisation IX)

The Exhibits which follow the format above and appear throughout Part Two of the thesis are intended to aid the reader in the assimilation of the material presented. Whilst the reader may omit them without detracting from the substance of the text, they serve a number of functions:

- (a) they highlight particular issues under discussion, these issues are indicated by the title of each exhibit;
- (b) in a few cases they avoid convoluting the text by consisely conveying information relevant to the discussion, for example, Exhibit 5a contains two definitions of accounting to indicate to the reader the manner in which these terms are to be understood;
- (c) mostly they represent additional evidence in the form of verbatim quotes to support the arguments being presented by indicating the degree of consistency in the findings, the source of every item in every exhibit is identified;
- (d) the central evidence is often underlined but contained within a wider context of the tape-recorded data, this is intended to indicate the integrity of the writer's interpretation of respondents' realities;

(e) in most cases the constituent quotes have some comparative feature which either inform consistencies within one of the countries or the cross-national differences between them.

To illustrate this latter point, Exhibit 5c compares a number of statements all made by German respondents about the German legal system; Exhibit 6f compares the statements concerning 'control' of those respondents at different hierarchical levels and at different sites in the same British company and similar positions in the matched German counterpart; Exhibits 6b and 6c each contain a number of statements concerning company recruitment policies from British and German respondents respectively, taken together Exhibits 6b and 6c also constitute a cross-national comparison.

The essential purpose of each exhibit may be identified, firstly, from its title and, secondly, by its comparative dimension given by the source of constituent items, that is, the hierarchical position of the respondents (the lower the number, the higher the position, full job titles are given where this is of particular importance), the number and nationality of each Organisation.

Finally, these exhibits illustrate the capacity of a subjectivist, interpretive framework to expose considerable consistency in research findings. This, in turn, may be taken as indicative of the flexibility of this approach and its meaningful application to different units of analysis - an individual, a department, a company, a society.

3.10 CROSS-NATIONAL RESEARCH PROBLEMATIC

The major problem with cross-national research when all of the fieldwork must be completed in one country before it is started in the other, is that, without prior exposure to the other culture, it simply is not possible to imagine the deep-seatedness of differences. Words, gestures, behavioural norms, events, meanings, organisational forms etc, are commonplace and taken-for-granted in one's native surroundings. But the extent of this taken-for-grantedness is only realised when in an alien environment there is a conscious effort to compare. And even then the picture emerges only gradually, it is difficult enough to apprehend the differences, it is more difficult to understand why they exist: and by that time it is not possible to retrace the research steps in the native country.

Concomitantly, it is in the unfolding process that certain issues emerge as fundamental and assume their full importance. This was one reason why, in this study, not all respondents contributed to all issues. Another reason was that, even within a rigorously designed piece of research, no two situations or individual subjects are identical, there were always important differences. Although findings may be substantiated by evidence drawn from other sources, new research is expansive, it raises more questions than it answers.

3.11 SUMMARY

This chapter was constructed to clarify the writer's assessment of social science as an institution fulfilling the purpose of communicating knowledge about the social world. The writer's own conceptual position was defined in terms of the assumptions about the social world which informed the research programme and protocol and which influenced the methodology appropriate to the issues under investigation. The writer recognises human nature as both acting voluntarily to create the social world and possibly being constrained by the physical and social environment. Ontologically, the social world comprises multiple realities which may be negotiated according to both variant and relatively immutable practices. Ultimately, however, both the sense of being (ontology) and of knowing what is (epistemology) are subjective and open to negotiation, differences lie in the degree to which actors concur about what is and what is known.

The methodology employed was based on the following premises, (a) explaining the nature of social events necessarily entails understanding actors' subjective interpretations of the reality of those events; (b) that these interpretations can indeed be apprehended because the process of negotiating reality is founded upon a body of shared common-sense meanings and knowledge; (c) that this body of shared common-sense meanings and knowledge cannot necessarily be directly transferred in its entirety from one context to another, thus the integrity of the situation must

be retained by research in situ and sensitivity to subtle contextual particulars.

More specific considerations related to the selection of research subjects were also discussed, terms used throughout the thesis were defined and the research programme and protocol summarised. A detailed description of the sample selection process was presented which included numbers of respondents and the comparative features of the cross-nationally matched companies.

The three final sections were, respectively, a personalised account of the conduct of the research; an explanation of the manner in which the research findings were interpreted and presented; and an indication of what was considered to be the major cross-national research problematic.

PART TWO

THE EMPIRICAL FINDINGS

- CHAPTER FOUR CROSS-NATIONAL COMPARISON OF THE INSTITUTIONAL
DIMENSION
- CHAPTER FIVE CROSS-NATIONAL COMPARISON OF INSTITUTIONS, THE
CONCEPTUALISATION OF INDUSTRIAL ACCOUNTANCY AND
THE EMPIRICAL CONTEXT
- CHAPTER SIX CROSS-NATIONAL COMPARISON OF THE WORK OF FINANCE
PERSONNEL IN BRITISH AND WEST GERMAN INDUSTRY
- CHAPTER SEVEN CROSS-NATIONAL COMPARISON OF THE UNDERLYING
PROCESSES AND MAJOR DEVELOPMENTAL STAGES OF
TECHNOLOGICAL CHANGE WITHIN INDUSTRIAL FINANCE
FUNCTIONS
- CHAPTER EIGHT CROSS-NATIONAL COMPARISON OF NEW TECHNOLOGY AND
THE WORK ORGANISATION OF INDUSTRIAL FINANCE
PERSONNEL

CHAPTER FOUR

CROSS-NATIONAL COMPARISON OF THE INSTITUTIONAL DIMENSION

- 4.1 INTRODUCTION
- 4.2 THE STATE EDUCATION SYSTEMS
 - 4.2.1 Structures and Curricula
 - 4.2.2 Education and the Economy
- 4.3 OCCUPATIONAL INSTITUTIONALISM
 - 4.3.1 Structural Relationships
 - 4.3.2 Operational Characteristics
- 4.4 SUMMARY

4.1 INTRODUCTION

This chapter presents description and analysis of the two most important institutional dimensions of this study. Section 4.2 examines the cross-national comparative aspects of the State education systems and Section 4.3 explores the occupation of accountancy in similar manner with reference to the different legal systems in each country.

Making sense of findings documented in subsequent chapters depends on an appreciation of the wide cross-national disparity in the nature of these institutions, their historical context and the deep-seated values which underlie their structure and processes.

4.2 THE STATE EDUCATION SYSTEMS

4.2.1 Structures and Curricula

After the Second World War educational provision expanded rapidly in most Western European countries. In Britain secondary education became an entitlement with the implementation of the 1944 Education Act. Over time other structural changes have attempted to extend the assessability of education to able and motivated pupils from more humble backgrounds, for example, the introduction of comprehensive schools, the abolition of the Eleven Plus, the recent combination of the GCE and CSE into the General Certificate of Secondary Education (GCSE).

Whether these measures have had the intended meritocratic effects is a long standing debate (for example, the Robbins Report 1963, Little and Westergaard 1964, Halsey et al 1980). Nevertheless, whilst central governments have continued to implement structural educational initiatives, vocational training has remained an ideologically separate agenda. Although some schools have introduced vocational elements into curricula, the plethora of current training schemes has been devised, orchestrated and funded by central government and administrated outside the state education system, largely through the Training Division of the Manpower Services Commission. Thus, in Britain local authorities remain responsible for primary, secondary and tertiary college education; tertiary university education is nationally funded and falls within the jurisdiction of a national committee; and

vocational training is a separate government function. Co-existing alongside the state system, primary and secondary education may be paid for privately by parents sending their children to preparatory and boarding schools.

In West Germany after the fall of the Third Reich, a major concern of the Allies was the constitutional foundation of a Federal Republic. The democratisation strategy included a complete reform of the education system and devolvement of political responsibility and decision making authority to the regional Länder (ten in total which vary considerably in size and population). However, the rapid manifestation of ideological differences between the Soviet Union and the other Allies intensified Allied demands for constitutional reform against the general reluctance of the Länder authorities who envisaged the draft document as formalising the division of Germany. Amid public resentment or indifference, Allied demands were eventually satisfied by the delivery of the constitution in 1949 (Janssen 1974) which subordinated Federal government powers in the field of education to the individual states.

This de-centralisation was mooted as one of the primary reasons for the poor performance of Germany's education system about which public concern reached a crescendo during the 1960s and resulted in a major constitutional amendment. After 1969 the national government assumed wider powers in the overall planning of all stages of education and a more specific role in the funding of

universities and research: the Länder, however, retain responsibility for and control over all educational institutions including what is probably the most politically divisive issue - comprehensive education or Gesamtschule. Unlike Britain, vocational training is an integral part of the state education system and there is no comparable co-existing, alternative fee-paying educational structure.

The cross-national contrasts in institutionalised education are apparent in the relationships between structure, curricula, certification and the underlying values and philosophy embedded in the historical context. In Britain pupils receive a general primary education until the age of eleven, progress to the secondary stage (now normally within a comprehensive school) where the selection of specialised subjects must be made at thirteen culminating in certification of such at sixteen, now GCSE. The subjects selected at thirteen almost certainly dictate the course of future school study, this study is limited to three or four subjects at 'A' level. Requisite grades in the single-subject 'A' certificates will ensure a place on a university degree course, once again almost certainly dictated by what has already been studied. Many university courses compulsorily include periods spent in a working environment but many do not.

It is, therefore, possible for an individual to set out on a path, at the age of thirteen, progressively narrowing down to the study to accountancy for the next eight years and then enter the labour

market with no previous work experience. That this potential for extreme specialisation exists within the structure and content of British education hardly accommodates the needs of industry and is likely to become more counter-productive with increasing utilisation of new technology (see Chapter Eight). Yet, it also runs contradictory to the broad consensus of educationalists as to what the function of education should be. At the 1986 Head Teachers conference in Cardiff, one delegate was loudly applauded when he emphasised his role in education as *"the development of a more rounded person and not to provide cannon fodder for industry"* (BBC 1, Panorama, 2 June 1986). The manifest tenuous connection between education and work reflects this perception that employment and education are distinct social phenomena and that the latter is often something of a necessary burden which has to be endured and the sooner the paper qualifications are forthcoming the better so that the real business of earning a living can begin.

As one consequence, an individual may attempt to enter the labour market after eleven years of compulsory education without any or a minimal number of virtually worthless certificates - currently this is the situation faced by 40 per cent of school leavers (Panorama, *ibid*). A minority may find jobs, but now as vocational training has become a priority and developed an identity separate from that of education, 60 per cent join a Youth Training Scheme (YTS). Three years ago Britain had the worst record of any European country in persuading school leavers to stay on in school

or join a vocational training scheme. In the European Community as a whole, 43 per cent of population aged between 14-24 were engaged in some form of further education or training, in Britain the figure was 32 per cent (International Assignment, BBC Radio 4, 18 July 1986). The introduction of YTS was a major governmental initiative aimed to combat increasing youth unemployment (now generally recognised as so destructive in formative years) and the dramatic decline of apprenticeship training undertaken by industrial firms since the mid 1970s. Governmental expenditure on the scheme now exceeds one billion pounds annually with the extension of YTS to two years, despite a generally lukewarm reception from industry and trade union opposition.

Presently it is not possible to measure the success of YTS and other training initiatives in terms of the quality of skills inculcated and the creation of long term employment partly because of the lead time in the economy and partly because the attitudes towards and assessments of these schemes vary considerably. Opinions range from eulogistic praise of their utility and of the performance of trainees to cynical allegations that the whole programme is merely a mechanism for providing cheap industrial labour and reducing the unemployment total. Beyond the kneejerk reactions, however, lies a more formidable problem. As the findings of this research demonstrate in later chapters, the importance of training is not the nature of the scheme but the extent to which the philosophy and structure of training are supported by value systems in society and how this is translated

into the recognised worth and status accredited to the work activity for which an individual has trained. At present in Britain vocational training is not certified in any systematic manner which underlines recognised standards, it is not integrated into education and is developing as an inferior alternative to higher status education and attendant paper qualifications.

It is impossible to exaggerate the cultural differences in West Germany - the institutionalised form and processes of education and the underlying attitudes and value system. Education has a different meaning, it is an indexical phenomenon, a different situated particular of Britain and West Germany. In the Federal Republic all children receive very similar general primary schooling between the ages of six/seven to ten. At the end of the fourth year a selection must be made regarding the type of school in which education is to continue. Leaving aside the Gesamtschule (comprehensive), there are three basic types which are not considered better or worse, merely different for the different talents and inclinations of young people. Firstly, the Hauptschule. This is a five year teaching programme which combines general education with a clear bias towards practical activity across a wide range of science, engineering, craft, art and design subjects. In the later years pupils also spend part of the time working alongside salaried employees, the working environment could be anything from the studio of a master violin maker, to a small coach building factory, to the research laboratories of Hoescht or another multi-national. By the time

pupils take the Mittlerereife (middle maturity) - a grouped certificate of general education - they will have already gained substantial working experience and, more often than not, have been offered a job.

The second type of school - the Realschule - requires six years attendance during which pupils study in both the vocational and academic traditions. Though some specialisation occurs, the curricula are general as is the final certification, the same Mittlerereife as in the Hauptschule. This type of school provides a bridge between theoretical and practical orientations. Depending on students' aptitude and course of study, after the Mittlerereife a student either enters the labour market or continues to study for a further three/four years which would enable entry to most of the technical or teaching colleges: or it is possible to transfer to the Gymnasium.

This third type of school is the preparation for academia. Hence, curricula are theoretically biased, the same Mittlerereife is taken at sixteen (pupils may leave at this point) then followed by the Abitur (full maturity) three years later. Abitur is also a grouped, general certificate though there is a broad specialisation, not in particular subjects but oriented towards a family of subjects: studying Classics for example would include not only Greek and Latin, linguistics and literature but also modern languages (a foreign language is compulsory for most

university courses), mathematics, German, a science or general science, probably economics and arts subjects.

By now it should be clear to the reader that even if accountancy was recognised as an appropriate specialist subject (which it is not), it would still be impossible to concentrate the learning process as narrowly as is usual in Britain. Neither is it possible anywhere in the Federal Republic to attend university and graduate in accountancy.

Universities tend to be funded in equal proportions by the Federal government and the Länder authorities. Students do not pay for this education, grants are available according to principles similar in Britain. Although courses are specialised (and highly theoretical in content), it is possible to embrace subjects on a wider basis than in Britain, for example it is not uncommon to study economics within an engineering degree. Moreover, university courses are never less than five years duration: one semester per year for study and one either to revise or to work. It is common for students to travel abroad or work for longer periods because five semesters may be spread over six, seven, eight years.

The temporal separation between study and work is, therefore, far less rigid than in Britain. That this reflects a close perceptual connection is also manifest in the statutory system of continuing vocational education when pupils leave school after Mittlerereife.

This 'Dualsystem' obliges employers to release young employees for 36 periods of formal theoretical study every week until the vocational certificate has been attained. Thus theory and practice are complementary within an officially registered training contract (Ausbildungsvertrag), the terms of which include the appointment of a supervisor at the place of work and an employer's guarantee that the trainee will receive comprehensive work experience in all relevant departments.

There is no generic name for the vocational qualification and there is no English linguistic equivalent for 'Lehre'. An individual who has a Lehre has qualified within this system, this is preparation for the Berufsleben - life career, vocation or profession. It would be inaccurate to suggest that 'qualified apprentice' or 'apprenticeship' are synonymous because in Britain these labels carry connotations of manual/blue collar occupations whereas the vocational qualification in West Germany spans the whole spectrum of productive, commercial and service work activity.

Vocational education takes place in a Berufsfachschule (qualified vocational school). There are four basic types [1]. These schools are funded by the Länder from educational budgets and student-employees are paid (quite well) by the firms which train them, in agreement with trade unions during the normal course of pay negotiations. One of the reasons why less than 5 per cent of the West German population aged between 15-18 are unskilled

workers (BBC Radio 4, International Assignment, 11 July 1986) is because West German firms spend nearly £6 billion annually on the training of these young people - whose numbers have increased from 1.4-1.7 million during the 1980s (Merritt 1985). It is axiomatic that the breadth of secondary education, the accumulation of practical skills within an education system which effectively integrates vocational and academic traditions and vocational certification are highly valued in West German society. Education in Britain is comparatively highly specialised; more keenly perceived as a chronological predecessor to working life; a sharp perceptual distinction persists between education as the mechanism for transmitting knowledge and training as the instrument for teaching more specific job skills; and the latter are relatively under-valued. These are cultural differences the full import of which could not anticipated and only slowly unfolded as fieldwork progressed in West Germany.

4.2.2 Education and the Economy

Making sense of these cultural differences relies on an appreciation of the historical context. The bisected German nation emerged from World War II physically wretched, demoralised and facing the task of major re-construction. Although jurisprudence and civil service administration had submitted meekly to Hitler's Third Reich and by so doing remained relatively intact and the principal economic structures (business, banking and large industrial firms) were not destroyed in the war, the

economic system was in chaos (no currency base, infrastructure, import/export systems decimated). The social system was also shattered. The integration of ten million expellees from East of the Oder-Neisse line added to the burden and urgency of re-organisation. The, largely American, economic aid which poured into post-war Germany was accompanied by Allied aims to denazify, demilitarise, democratise and decentralise the nation during the process of establishing the new Federal Republic.

For most Germans, however, social credibility and economic viability on a structural level were distant concerns. After the immediate preoccupation with physical survival, [2]

"....came the problems of putting their personal lives back together again: returning to school, resuming a career, starting the business again, finding a job, raising a fatherless family."

(Conradt 1978:16)

With the immediate post-war average nutritional intake less than 70 per cent of the required minimum, the loss of the mainly agrarian Eastern territories [3], a scarce supply of natural minerals which could be exploited and the principal economic structures still functioning, the momentum of re-generation naturally centred on the importance of industrial production. As the socio-economic framework for the new Republic took shape, a highly motivated populace began to work towards gaining an international trading foothold fuelled, possibly, by a pervasive esprit de corps and what Weber (1902-4) had earlier identified as the

Protestant Work Ethic. A massive task of regeneration orchestrated by,

"....millions of Germans in every walk of life who suddenly took pride in themselves once more and in their capacity for work."

Crawley 1973:194, emphasis added)

By the late 1950s the German 'economic miracle' (Wirtschaftswunder) was well underway, engineered by a vital regard for industry and supported by an education system reformed, in significant degree, to enable citizens to contribute to and benefit from wealth creation through the manufacture and export of high quality industrial and consumer products. This may also have been influenced by Allied restrictions placed on the creation of wealth through financial media, some limitations on banking practices, for instance, have been lifted only relatively recently.

Throughout the post-war period West Germany has maintained the status and attractiveness of her manufacturing industry, production oriented and buoyed by stable or rising consumer demand. Control of industrial output has traditionally focused on the quality and quantity of products (Horowitz 1978), competent exercise of this control is distanced from theoretical excellence and desk-bound functions. Rather it is inseparable from the intimate knowledge of production processes which emanates (only) from practical work experience. Thus, a major thrust of

institutionalised education in West Germany is oriented towards the transmission of practical vocational skills held in high esteem within a cultural philosophy which elevates 'achievement by doing'.

By contrast, Britain had emerged victorious and structurally unchanged from World War II, commanding the world's largest recorded empire. Jurisprudence and the polity remained intact; the titled glitterati, prestigious professions and The City of London had preserved their high status positions and the perpetuating mechanisms such as traditional old boy networks and elitist fee paying educational institutions. There was an unquestioned acceptance of and confidence in Britain as a leading world military and economic power with the expertise to administer her fortunes. The traditionalism of civil service administration was buoyant and preoccupied with the stewardship of annexed territories.

Sterling was firm, trade channels had opened ever wider under the auspices of a 'Commonwealth' and the wheels of industry were turning without any rearrangement of integral power relations and alongside the deep-seated antipathy of the privileged stratum (cf Cornwall 1977, Sorge 1979). Britain's position in world markets was already firmly anchored, uppermost in the social consciousness was not the promotion of industrial production but the maintenance of the status quo: landowning, elitist academic schooling, the peerage system and other honorific labels, the financial

cornerstones of wealth creation and the *modus operandi* of administration. At least, it is reasonable to assume that if the maintenance of these elements of the status quo were not uppermost in the social consciousness, the last forty years would have witnessed radical change. The distribution of wealth in British society remains virtually unaltered and the status (and income) differentials between besuited administrators or professionals and those on the shop floor or in the field remains one of the most disparate in Europe. Despite various attempts by successive governments to extend the accessibility of education, those already advantaged appear to gain advantage and technical or vocational training continues to be regarded as an inferior alternative to more academically oriented education regardless of the economic contribution to society of training vis a vis education.

This distinction between education and training is fundamental and penetrates every aspect of British thinking:

"Training must, first of all, be distinguished from education. Training is about giving people skills; education is about giving them knowledge and helping them adjust their attitudes. ...Education should take place at the beginning of a project. ...By the time implementation arrives....training then is concerned with giving the user confidence in the new system by giving them the requisite new skills."

(Basic Systems Analysis, Lee 1986:93)

There is no such ontological distinction between education and training in the Federal Republic, there are simply different types

of Berufserziehung (education for the life career) (van Bernem 1978) undertaken in different types of schools. Weiler's (1973:43) analysis of the distribution of higher educational resources disproportionately concentrated within the middle class has licenced others (for example, Conradt 1978:38) to argue that *"there is a strong class bias in the entire system"*. One suspects, however, that this bland statement arises from a static structural analysis couched in what is known about Anglo-Saxon processes for it ignores entirely the processes which are peculiar and integral to German education.

For example, vocational and academic education are not mutually exclusive alternatives. As a later chapter demonstrates, many West German senior managerial respondents had attained their Lehre (vocational qualification) in industry before returning to full time college or university education. The inferiority of vocational education is not an issue, many respondents with recruiting responsibilities felt the Dualsystem was preferable as a preparation for working life - *"these three years people are better workers"*. Those without university qualifications are not thereafter precluded from senior positions and

"If you look at the earnings gap between the top and bottom ten percent of the population, the West Germans work hard for 36 percent less inequality than we [Americans]."

(Thurow 1980:7)

Other observers (viz Ardagh 1987:204-211) have noted the inherent egalitarianism of the German education system and (for example, Lawrence 1980, Glover 1986) have documented the high status and income of the 'making and doing' occupations, engineering for instance, in West Germany relative to their British counterparts. On the other hand no-one can deny the buoyancy of the German economy, her increasing balance of payments surpluses and the strength of the Deutsche Mark while Britain's principal wealth creating medium, manufacturing industry, languishes and the relative long term value of Sterling continues to decline. Twenty years ago the exchange rate was DM12 to £1 Sterling, today British visitors are lucky to receive three Deutsche Marks for their pound. The national institutionalised structures and processes of education are important factors in the relative economic position of Britain and West Germany but insofar as education reflects deep-seated values, these are not the only important factors.

4.3 OCCUPATIONAL INSTITUTIONALISM

4.3.1 Structural Relationships

West Germany has been described as having a 'civic culture' (Almond and Verba 1963; Ardagh 1987). Civic institutions were not dismembered during the Third Reich largely because *"they had surrendered to the corruption of their work by the ruling party"* (Brecht 1953:264). A 'legalistic-bureaucratic' mentality is reflected in a strictly hierarchical but efficient civil service, little changed from the original Prussian model of the Hohenzollern emperors (Ritter 1965:40), and in the character of German law.

Historically, jurisprudence has been influenced by a combination of the Roman legal codes of the Middle Ages and the Napoleonic Code from the French occupation of the Rhineland during the last century. The massive task of writing and re-writing the detailed, comprehensive and unambiguous codes which represent the basis of Germany's unified legal system was completed at the turn of the century. This codification means that *"there is hardly an area of human relations in Germany untouched by some rule, order or regulation"* (Kommers 1976:50). Or, as the West German respondent of Organisation XII put it, *"in Germany we have three laws for everything"*. An associated facet of the underlying positivist philosophy is that protection against arbitrary decisions is embraced by codification: the remit of legal functionaries does not, therefore, include the role of independent creator - the

power to set precedents. Rather, the fundamental task is one of unbiased administration of the law as it is written. This is also the task of State registered auditors and of those within industry who are charged by name (not by occupation) with the legal responsibility for financial accounting.

British jurisprudence operates quite differently. Underlying the Anglo-Saxon system of Common Law is the phenomenon of precedential judgements and, thus, the facility for challenging existing and making new laws. Neither is British law comprehensive: most aspects relating to financial accounting are not embodied in law but enshrined in the Statements of Standard Accounting Practice (SSAP) issued, changed and re-issued by representatives of the same independent occupation which delivers the responsibility for ensuring stated practices are adhered to within industry and is charged with the authority for assessing integrity and proclaiming to the outside world that standard practices have indeed been adhered to. This function, as are many within the sphere of financial activity, is organised and operates cross-nationally with little similarity.

Historical documentation of the British accountancy profession (for example, Willmott 1983, Powell 1984) records the founding of the first representative body, the Institute of Accountants in London (IAL), in 1870 and recounts subsequent political manoeuvring as different representative organs jockeyed for social recognition. These bodies were either Incorporated (under the

Companies Act of 1862) which provided a maximum degree of legal protection but ensured a minimum of outside interference (Millerson 1964:94): or granted a Royal Charter. This latter conferred higher prestige because Charters became synonymous with ethical veracity and social responsibility, they imbued an occupation with a wider sense of social duty and *"among the great advantages of Charters were....and the characteristics of monopoly they conferred"* (Institute of Chartered Accountants in England and Wales [ICAEW] 1966:20).

The first Royal Charter, granted in May 1880, was a licence to lay the groundwork for an elite association. The IAL's representative Council soon established two different classes of membership and subscription fees, instituted restrictive membership conditions, written examinations, disciplinary procedures and a five-year fee-paying articulated clerkship: mechanisms which provided the locus standi for membership control and social recognition in the specialist occupation of financial accounting. By the early 1900s various Companies Acts had established limited liability and private companies as legal entities which required the appointment of an auditor with right of access to ledgers and the duty to report to shareholders whether the balance sheet represented a 'true' account of the books and thus the financial state of the company. Less affluent practitioners, also eager to distance themselves from the incompetent and unscrupulous, were originally represented by the Society of Accountants and Auditors (later

became Incorporated - SIAA) which eventually amalgamated with the ICAEW in 1957 thus confirming the dominant position of that body.

A burgeoning free market economy between 1880 and 1920 and the absence of any formal business training conspired to promote accountancy as a valuable predicate for an industrial career and spawned a number of alternative representative bodies such as the Institute of Cost and Works Accountants, the Association of Certified Accountants and the Institute of Municipal Treasurers and Accountants [4]. Also during this time a series of scandals alerted public awareness to what seemed a largely unregulated, fragmentary and chaotic free market for accounting services. The State intervened with two Acts in 1903 and 1918 but the issue of State registration remained a bone of contention for many years often fuelled by bodies resentful of the monopolistic auditing functions and privileged status of the ICAEW and the SIAA. Eventually the Select Committee of the House of Commons on Local Legislation advised a re-organisation of the disparate bodies into unified structure: a proposal hotly and successfully contested by the ICAEW on the ground that it would dilute professional practising standards against the public interest - the silent scenario, of course, was that it would dilute the ICAEW's professional standing against their own interest.

This progressive accumulation of power and influence in the political arena has been a major factor enabling the, still fragmented, accountancy profession, and especially the ICAEW, to

play a vital role in shaping its own destiny. In the absence of State registration, mergers have played a larger part in integrating the profession. In 1968 the Council of the ICAEW crossed the Rubicon and touched off a heated debate with a proposal to integrate the six major bodies, the debate continues and the depth of divided opinion on this issue was clearly demonstrated by respondents, Exhibit 4a below.

Exhibit 4a

Integration of the British accountancy profession - no consensus

"I'm against it, it took me three years to become a member of ICAEW, if I'd wanted to become a Cost and Management accountant I would have taken their exams which are easier....A chartered accountant is a proper accountant whereas a cost and management accountant is someone who works in industry....I can't see any point in giving everyone the benefit of being able to call themselves a chartered accountant."

(Respondent 1, Accounting Practitioner, Organisation XII)

"The possibility for integration exists only in small areas because we're all geared to different functions."

(Respondent 2, Accounting Practitioner, Organisation XII)

"I can't see integration happening in that we're all steeped in our own traditions."

(Respondent, Institute of Certified Public Accountants)

"If we were all one body it would have tremendous advantages for our status as accountants when we spoke, people would say the accountancy profession has spoken....The advantage of having separate bodies, if there is one, lies in some form of specialisation."

(Respondent, Institute of Cost and Management Accountants)

"The main barrier to integration is probably the English Institute."

(Respondent, Association of Chartered Certified Accountants)

"Integration of the accountancy bodies, short-sightedly rejected in 1970, will be inevitable before the century is out."

(Accountancy May 1980:71)

The structural components of independence and fragmentation constitute the focal cross-national differences in terms of occupational organisation. Relatedly, the West German profession is not accountancy but strictly confined to auditing. Although various Companies Acts have refined the legal status of businesses, based on a clear conceptualisation of the function and parameters of company financial accounting, the detailed and comprehensive legal prescriptions have been enshrined in statute since the early part of this century: as was the State registration of the oldest body of public auditors - Vereidigte Buchprüfer (VBP). The primary concern of the law was and is the protection of creditors, thus financial accounting is conservative, for example, asset values tend to be under- rather than over-stated; no allowance can be made for projected increases in asset values but projected increases in the value of liabilities must be declared; inflation is not taken into account. And what may be a reflection of 'civic culture', German law is also framed to protect the complex structure of national taxes (Lafferty 1975).

Uniform industrial accounting was originally introduced during the 1920's following the publication of Der Kontenrahmen (Framework of Accounts, Schmalenback 1927). The organisation of Wirtschaftsprüfer (WP - auditors) was given its legal basis in 1931 and during the Nazi Third Reich adherence to 200 uniform charts of accounts were made compulsory for different types of German industry and commerce. After World War II, in 1949, almost all

German businesses were compelled to comply with new charts (Gemeinschaftskontenrahmen) based on those introduced in 1937 during the Nazi regime but the position of auditors during the general post-war fragmentation of the law was not rectified until 24 July 1961 (Wirtschaftsprüferkammer 1981). On this date the Wirtschaftsprüferordnung came into force, the Act amalgamated the VBP and WP, delegated the technical practising matters to the Institut der Wirtschaftsprüfer and established the Wirtschaftsprüferkammer, or Chamber, to regulate the profession. The professions of Steuerberater (StB - tax advisor) and Steuerbevollmächtigter (StBev - tax assistant) were also licenced (Oldham 1975): the latter qualification no longer exists.

Individual membership of the Institut der Wirtschaftsprüfer is optional although the West German respondent of Organisation XII suggested between 95-7 per cent of qualified auditors would be members. A very small minority of these would also fulfill some functional role within the Kammer although there is no formal relationship between these two bodies. Individual membership of the Wirtschaftsprüferkammer is statutory for all qualified practising WPs. Policy documents issued by the Kammer refer to the profession as being self-regulating but this is a misnomer compared to the British situation. All activities relating to financial accounting within industry (method, chronology, presentation), the function, practice and professional conduct of auditors and of the role of Kammer are prescribed in law. Although practising offices are outside the public sector and

recognised as legal (but not business) entities, the Kammer is the regulatory machinery and this is a 'public corporation' operating under the auspices of the Federal Ministry of Economics. West German auditors are State registered and their practice is essentially State controlled.

4.3.2 Operational Characteristics

Clearly, the formal organisational structure of the profession differs radically between West Germany and Britain, correspondingly, operational differences are transparent. Firstly, there is the process of membership: and this may be symptomatic of the power and influence of the British independent bodies, accountancy as a school subject or university discipline exists in Britain. A degree, however, does not confer eligibility for full membership. Since articulated clerkship no longer exists, this is conferred only after one of the institutes accepts an individual as a student member and this student satisfactorily passes requisite theory-oriented examinations, constructed and marked by the institutes themselves.

A 'trainee accountant' is a widely recognised socio-economic label and although the institutes do not physically train potential accountants, they do determine the content of training. Findings of this study suggest that training provision within Britain is very variable, largely dependent on the nature, size and philosophy of employing organisations. Generally, it appeared

that large firms of practitioners expend considerable resources particularly in the length and quality of formally organised in-house courses and generous study leave; the public sector is less generous but often permits day release for formal study in colleges and a modicum of study leave; industrial policies differ widely, formal in-house tuition is non-existent and external provision has become extremely rare, the supervision of progress and any other assistance seems to be a function of personalities rather than any coherent strategy for accountancy training.

Nevertheless, ultimately the independent British institutes confer competence and reserve the privilege of controlling membership and exclusivity. In the United Kingdom currently there are approximately 200,000 accountants of which about 150,000 are chartered. Against a rationale of wider social accountability and protection of the public interest, the institutes also retain the right to define standards of professional conduct, to discipline individual members who transgress defined boundaries and to effect expulsion from the institute of such transgressors. In practice, however, codes of professional conduct are substantively fluid, formal expulsions are extremely rare.

"And the concern to safeguard the public interest seems to amount to little more than an exercise in defending the profession's privilege of self-regulation."

(Willmott 1983:28)

In West Germany accountancy does not merit a distinctly specialist educational subject in its own right. It is integrated within the wider study of economics in schools and within National or Business Economics disciplines at universities. There is no recognised category of industrial 'trainee accountant'. The only formal accountancy study resulting in the qualification of Bilanzbuchhalter (literally balance bookkeeper) is undertaken by candidates in their own time at night school and conferred by the Chamber of Industry. Whilst this certification is recognised within the industrial arena, it is not supported financially and is not perceived in any way to promote supervisory or managerial competence. There was no evidence to suggest the existence of an organised association of Bilanzbuchhalter.

Qualifying as a Wirtschaftsprüfer is a long and difficult process. The large auditing firms do provide ad hoc in-house courses related to practising issues but the absence of a recognised label of 'trainee auditor' is underlined by the nature of theoretical study, reading is undertaken by aspiring auditors in their own time. In order to be admitted to the examinations, candidates must demonstrate the successful completion of a university curriculum and at least five years work experience in a business environment, four of which in auditing: or ten years experience without a university degree.

Eligibility is assessed by an admission board comprising a representative of the State authority, a representative of the

business community and two Wirtschaftsprüfer, all are appointed by the State authority. Nationwide standardisation of the membership process is achieved insofar as every aspect of the examination and qualification procedure is regulated by statutory order of the Federal Ministry of Economics in agreement with the Länder Councils [5]. The examination comprises an oral test, written papers and the presentation of two audits conducted and documented by the candidate.

In Britain the institutionalised determination of accounting/auditing competence is **theory-driven**, largely dependent on the academic ability to pass written examinations and the popular aim focuses on overcoming the intellectual obstacles in the shortest possible time because therein lies the passport to socio-economic upward mobility. This passport may be forthcoming for graduates and non-graduates by the age of 23. By a contrast which reflects the underlying philosophical relationship between education and vocation in West Germany, although the formal examination process for auditors is arduous it is driven largely by **technicity** - the **skilled practical application of accumulated knowledge**. Thus it is rare for a WP to qualify under the age of 33-35 and individuals normally initially qualify as tax advisors. At present in West Germany there is no organised or recognised socio-managerial cadre of industrial accountants. There are approximately 27,000 tax advisors and 4,000 auditors.

Under the Articles of Association of the Kammer, its institutionalised role includes nomination of the Wirtschaftsprüfer appointees to the admission and examination boards. These boards also consider and define the conditions for re-qualification and re-entry into the profession because VBPs and WPs who cease to practice forfeit professional State registration without which practice is illegal. The Kammer is charged with the statutory duty to keep the Registers of currently qualified auditors and executes the stewardship of professional conduct through an official responsibility to inform the Federal authorities of any transgressions. The *"Requirements of Professional Practice, Rights and Duties of VBPs and WPs, Disciplinary Actions and Measures on Account of Breaches of Duty, Prescriptions for Prosecution, the Composition of the Senate of the Federal Court of Justice for Matters of Wirtschaftsprüfer and Rules for Professional Proceedings"* are all officially documented (Wirtschaftsprüferkammer 1981).

Clearly, professional membership and practice are strictly controlled according to uniformly applied standards of measurement. This control, however, is exercised by State apparatus and not by associations independent of State regulation as is the case in Britain. This immediately poses a problematic for Anglo-American analyses of the professions which document as typical characteristics of such occupations the possible existence of a training function and a definitive existence of internal competence-conferring and behavioural regulatory mechanisms as

indicative of public accountability or strategic elements in professionalisation and, thus, the maintenance of exclusivity. Neither the taxonomic nor processual paradigms discussed in Chapter Two satisfactorily accommodate cross-national structural or operational differences in what is ostensibly the same professional function of auditing in each country.

Whilst the processual paradigm drew attention to the need to expose analytically the interface between occupational ideology and wider socio-economic and political conditions, it has not developed such a framework. On the other hand, the political interfaces of professional power represents the theoretical focus for the critical perspective. Critical analysts argue that professional self regulation is inherently harnessed to the inequitable distribution of political power characteristic of class-divided capitalist society. In Britain accounting and auditing functions clearly command a high percentage of the activity which constitutes the economic infrastructure. For example, Briston and Perks (1977) assessed the total annual spend on such services by London Stock Exchange quoted companies to be in the order of one billion pounds in the late 1970s. Interestingly, the total number of published annual company accounts in the Federal Republic for 1983 was only 6515 (information supplied by respondent 3, Organisation XII from official Wirtschaftsprüferkammer reports).

The significance of professional self regulation in Britain lies not only in its government of current economic activity but also in its dirigent influence on the reproduction of social relations of production in wider society. Clearly, the construction and legitimization of accounting policy and practice is a principal instrument in the exercise of economic and political power. Both these functions came under critical scrutiny during calls for State regulation of the British profession in the late 1960s and 1970s. The profession's response to attacks on its integrity was the formation of an Accounting Standards Steering Committee in January 1970, the Consultative Council of Accountancy Bodies in 1973 and a definitive process for the development of accounting standards proposed by the Accounting Standards Committee formed in 1976. The English Institute's hegemony of these organs and within the standard setting process coupled with a critical review of its operational nature has been well documented (for example, Willmott 1983). Nevertheless, the profession has effectively repulsed any movement towards State intervention or any form of external regulation.

Because the professional bodies have continually failed to confront the vexed matter of establishing firm conceptual accounting foundations, the standardisation of accounting practices which these same bodies have attempted to develop remains conjectural and obscure. This ipso facto lies uneasily against the issue of social accountability for, apart from a minority at the corporate apex, social actors' accessibility to

constructions of accounting reality is minimal as is redress to the ultimate statement of social accountability - 'a true and fair view'.

The, albeit fragmented, profession has maintained the legitimation of a structural position which permits government of economic activity and a dirigent influence on the reproduction of social relations of production by sole stewardship of accounting policy and practice. Moreover, accounting actors continue to enjoy a privileged socio-economic position. However, the profession also continues to enjoy political immunity from external demands to define a coherent conceptual framework within which the technicity of accounting practising standards would be transparent and thus operationalise a means of making accounting actors socially accountable for their activities. It is difficult to argue that this situation exists for reasons other than the profession's accumulation of political power and that this power has accumulated through an ideological complicity with the dominant elements of capitalism. Thus, it is also difficult to reject the critical political economy perspective on the grounds of implausibility or inadequacy.

However, West Germany society is also a model of capitalist socio-economic and political organisation but the philosophy and phenomenon of accounting is not comparable. Firstly, accounting/auditing, and other financial activities such as treasurership, merchant banking and the Stock Exchange, contribute substantially

less to activities within the economic infrastructure vis a vis in Britain. For example, a much higher percentage of loan capital to West German industry is provided by the clearing banks on the basis of long term strategies, thus these banks play an important part in mergers, acquisitions etc; the laws relating to equity revision also preclude a high level of institutional speculation, thus the Frankfurt Stock Exchange opens only for two days in every week; audited, annually published company accounts in West Germany are considerably fewer.

Secondly, as was described above, no State resources are committed to specifically accounting education; the exclusivity of the accountancy profession is not a relevant issue because no such profession exists; the exclusivity of the auditing profession does not arise from activities of auditing actors but in every aspect through State regulation and control.

Thirdly, protection of creditors is the principal ethos underlying the conceptual framework for industrial financial accounting and auditing which are clearly defined in law as are all accordant standard practices. Thus there is a philosophical consistency insofar as social accountability for companies' economic activities is manifest through standardised, detailed and comprehensive statutory regulations. Since the mechanism for operationalising social accountability is the auditing profession, individual auditing actors do not put their names to an opinion of 'a true and fair view' but affirm that company accounts have been

formulated and presented according to legal prescriptions. This is an essentially different function from that of British auditing actors.

Fourthly, the essential difference is that whereas in Britain auditing depends largely on highly subjective interpretation and judgement, in West Germany the role of an auditor is to **administer the law**. Whilst this does involve a degree of interpretation, it is not unchecked. The auditor is not the unimpeachable final arbiter of the law because the Wirtschaftsprüferkammer is charged with the legal responsibility of verifying all audits and publishes the results of this process. This then is tantamount to ensuring the social accountability of the auditing profession, Exhibit 4b below.

Exhibit 4b

**The Wirtschaftsprüferkammer - operationalising the social
accountability of auditors**

Of the 6515 audited, published company accounts in 1983, the Kammer raised 160 different questions against 202 actual or assumed deficient auditing practices. The subjects of these questions were:

balance sheet	132
WP's opinion	14
WP's explanation	5
profit and loss statement	37
consolidated accounts	
balance sheet	13
WP's opinion	1

"If they have a question they write a letter, they don't say you departed from the rules, they just keep on asking questions

depending on the answers. If they consider there has been a departure from the rules they go certain steps further."

(Respondent 3, West German Wirtschaftsprüfer, Organisation XII)

Finally, accounting regulation in the Federal Republic arises through an initial process of negotiation with representatives of the Kammer, of the Institut, accounting academics and possibly spokespeople for the industrial and commercial communities. However, contrary to suggestions by Cooper et al (1985:46), during the course of 52 interviews in West Germany no evidence could be found to suggest that industrial financial accounting actors have a representative body or are organised on the basis of any occupational commonality. Also contradictory to a statement in the same paper (page 47) "*Are auditing standards set by the accounting profession?*", Cooper et al state in the affirmative for West Germany whereas the findings of this research suggest this is misleading if interpreted in the sense of the British tradition. Wirtschaftsprüfer participate in discussions either as representatives of their Institut or they may be representatives of the Kammer. Both the Institut and the Kammer also issue guidelines for interpreting prescriptive accounting standards or auditing practices. In these respects they may be influential but they do not set these standards or practices. The Federal Ministry of Economics is the principal authority under whose auspices all accounting matters become enshrined in law. The function of the judiciary is to administer those laws, a role which does not extend to precedent.

Cooper et al further confuse their discussion by referring to the 'accounting profession' in West Germany. The main thrust of this section has been to explain why one cannot talk of the accounting profession in West Germany as if it were comparable to Britain. 'Profession' as 'accounting profession' are indexical expressions, making sense of the auditing profession in the Federal Republic depends upon apprehending the cultural context within which that vocation is organised and operates. Clearly, the processes and system of law are framed to protect the rights of citizens. Under the Constitution, citizens may also exercise their human rights in matters of accounting or any other civil or criminal action by demanding to be heard by an independent tribunal. Britain has no such Constitution nor redress for citizens in terms of human rights.

In Germany whilst auditing actors are not State employees, the vocation is controlled by and must operate in strict accordance with the legislature of the land, the activities of industrial financial accounting actors must also similarly comply. The power and social standing of the vocation derive from a single source - technical expertise. On the one hand this expertise may be utilised to articulate opinions in order to influence policy making and operational processes but this influence may ultimately be inconsequential, even socially recognised technical expertise does not confer the privilege to determine accounting and auditing policy and practice. On the other hand this expertise is utilised in the conduct of work activity but it does not represent a carte

blanche licence. The manner in which work activity is to be conducted is legally unambiguous and many formally established mechanisms ensure the wider social accountability of auditing actors for their actions.

In Britain the profession is controlled and operates largely outside State legislature which itself defines few operational parameters. Whilst the profession perpetuates on the basis of theoretical knowledge, the power of the profession stems from the historical accumulation of political right to define its own structural and operational environment and to account for the activities of members on a wider social basis. By drawing attention to the identification of professional ideology with that of laissez faire capitalist economies, the critical perspective presents a plausible framework for understanding the essence of professional power.

However, one is bound to challenge Marxist analysis of the German profession unless the State apparatus itself is perceived as an instrument of capitalism. Marx did, of course, reject the Hegelian notion of the State as the embodiment of Spirit or Idea, rather he perceived the State as a reflection of class relations in civil society (Paris Manuscripts 1944). Apropos of the class-based conceptualisation of the State, the extension of more recent Marxian dialectic to the professions confronts the basic problematic of accommodating ontological cultural differences between similarly capitalist societies: extant differences in

underlying values and central philosophical and ideological components. These manifest in macro institutionalised structures and processes, and find observable expression in operational form. If, as is argued here, cultural differences evidently embrace a differential source, location and exercise of power which can be held to distinguish rather than commonalise capitalist countries, the challenge to Marxist analysis of the professions appears to unfold as a requirement to posit the immutable essence and principles of professional power relationships characteristic of capitalist economic orders: with a corollary that the immutable essence and principles of power must, of course, be demonstrated as distinguishable from those characteristic of non-capitalist countries.

4.4 SUMMARY

Any cross-national analysis of the State education systems must depart from a point which recognises the differences in meanings and functions of education between Britain and West Germany. In Britain a sharp distinction exists between education and training, the former is assumed as the mechanism for inculcating broader-based knowledge, the latter as an instrument by which more specific jobs skills may be transmitted. The tenuous perceptual connection between education and work reflects in the curricula and structure of State education whilst training provision has developed separately and rapidly during recent years to combat especially youth unemployment. At present, training certification is not nationally standardised but insofar as training absorbs those not sufficiently intelligent, motivated or financially able to fully utilise educational facilities, it is developing as an inferior alternative.

West German society does not distinguish between education and training, all learning programmes are different types of education which are intended to provide citizens with the basis for a life career, vocation or profession. The curricula of the State system is considerably less specialised than within Britain, academic and vocational traditions are integrated in a manner which precludes mutual exclusivity: nor is education perceived or provided as a rigid precursor to economic activity. Many features of the German educational system maintain a close connection between study and

work and all forms of certification are nationally standardised and recognised by employers whose financial contribution to the education process is far in excess of their British counterparts. A high level of commitment of the nation's resources to education is underlined by a philosophy which promotes the value of practical skills and work experience - of being able to do the job rather than accumulate paper qualifications which indicate theoretical ability.

The structure and content of institutionalised education is a reflection of a national value system, other institutions are similarly reflective. West Germany has been described as having a 'civic culture', a 'legalistic-bureaucratic' mentality, the values of organisation, order, precision and equity are discernable in the modus operandi of the Constitution, jurisprudence, the civil service and all occupations which have some legal function. The legal profession itself has historically played in central role in Prussian then the development of German society: the remit of legal functionaries, however, does not embrace the power of precedent. The protection of citizens against arbitrary judgements is afforded by the detailed codes which form the basis of the Federal Republic's unified legal system.

Within this system, the auditing profession is strictly State controlled. The processes of qualification, membership, professional conduct and practice are all statutorily defined. Auditors, that is Wirtschaftsprüfer, exercise a responsibility to

verify the financial accounts of economic organisations as having been constructed and presented according to legal prescriptions. This, then, is one mechanism by which the social accountability of organisational practice is achieved. The social accountability of the auditing profession itself is mobilised through the activities of the Wirtschaftsprüferkammer, a public corporation whose structure, role and duties are also enshrined in statute. Underlying the detailed legal codes lies a principal concern to protect creditors, hence, although the Institut der Wirtschaftsprüfer and the Kammer may influence the standard setting process, the Federal Ministry of Economics is the authority under whose auspices all financial accounting and auditing matters become embodied in law.

Although substantially fewer company accounts are published annually in West Germany vis a vis Britain, financial accounting is clearly an industrial function. Accounting, however, is not specifically supported within the State education system, it is integrated within the wider study of economics. There is a specific qualification of Bilanzbuchhalter (bookkeeping) delivered by the Chamber of Industry but this is comparatively rare and certainly not a necessary qualification for supervisory or managerial promotion. No fieldwork evidence could be found to suggest that industrial accountants (which the Germans translate as bookkeepers) are nationally organised on the basis of any commonality or that within industry they constitute a recognised socio-managerial group.

By contrast, the historical development and accumulation of power of Britain's accountancy bodies have been well documented. There seems little doubt that the maintenance of political privilege - self regulation and control of the processes of membership, practice and standard setting - has been encouraged by the absence of a codified legal system. Jurisprudence in Britain is based on Common Law which centralises the principle of precedent and may be perceived as accommodating the values of laissez faire and individuality. The system of Common Law does not provide a clear conceptualisation of function and framework of financial accounting within economic organisations, thus the operationalisation of social accountability becomes more elusive.

Historically, through different organised bodies, the accountancy profession, which includes various strands of accounting including auditing, has professed to exercise the role of stewardship and thus deliver the responsibility for ensuring the social accountability of economic organisations. These bodies, however, have been criticised for failing to confront the vexed matter of establishing firm conceptual accounting foundations upon which the integrity of standardised accounting and auditing practices must rest. Correspondingly, the purported role of safeguarding the public interest is seen by some as little more than the defence of the privileged position of accountants, either as auditors or as a recognised socio-managerial group within economic organisations. The full operational and theoretical implications of these institutional differences will unfold in subsequent chapters.

Notes to Chapter Four

1. All four main types of Berufsfachschule teach general subjects - religious instruction, politics, German, English, and sport and specialise:
 - (a) Commercial school - economics, business administration, accounting, mathematics, geography, shorthand, typewriting or word processing and office administration;
 - (b) Technical school - general economics, mathematics, physics, chemistry, technology, geometry and technical drawing;
 - (c) Domestic Science school - general economics, mathematics, natural science and food subjects;
 - (d) Agricultural school - special techniques for agricultural products and all the other subjects. (Van Bernem 1978)
2. Anecdotal evidence suggested that, following victory, the Allies closed many shops in Germany and transferred much of remaining foodstuffs and clothing to the newly released prisoners of war. In any case, food and clothing was not plentiful enough to be rationed (as was the case in Britain) - 'you had to know someone'. Many German families could not grow food (as British householders were encouraged to do) because of the unavailability of seeds.
3. Agricultural production contributed only 12 per cent of gross national product in 1949. (Statistisches Jahrbuch der Bundesrepublik Deutschland. Stuttgart: Kohlhammer, 1976).
4. Although the names have changed, today these three and the ICAEW constitute the four largest independent accountancy bodies: together with the Institute for Chartered Accountants in Scotland and the Institute for Chartered Accountants in Ireland, these form the big six.
5. The composition of the examining board is:
 - a representative of the supreme State authority as the chairman;
 - a university professor in business economics;
 - a member with qualifications required for appointment as a judge;
 - a representative of the tax authorities;
 - a representative of the business community;
 - three Wirtschaftsprüfer, one of whom must be experienced in the auditing of co-operatives. (Düsseldorf: Wirtschaftsprüferkammer, 1981:64-5).

CHAPTER FIVE

CROSS-NATIONAL COMPARISON OF INSTITUTIONS, THE CONCEPTUALISATION OF INDUSTRIAL ACCOUNTANCY AND THE EMPIRICAL CONTEXT

5.1 INTRODUCTION

5.2 HISTORICAL AND INSTITUTIONAL INFLUENCES ON THE DEVELOPMENT OF FINANCIAL AND MANAGEMENT ACCOUNTING WITHIN INDUSTRY

5.3 ORGANISATIONAL CONTEXTS

5.3.1 Functional Operational Relationships

5.3.2 Structural Comparisons

5.4 SUMMARY

5.1 INTRODUCTION

The previous chapter examined the institutional differences and relationships between the education systems, the occupation of accountancy and, in less detail, the legal systems in Britain and West Germany. The purpose of this chapter is to explore the ways in which institutional phenomena both influence and are integral to the conceptualisation of industrial accounting across the two countries. This analysis exposes a crucial factor - the cross-national contextual differences in the meaning of accounting within industry. Section 5.2 draws attention to this indexicality and why it exists. It is a fundamental proviso for understanding national differences in the approach to the organisation of accounting work which, in turn, have influenced the processes and consequences of technical change.

These cross-national differences notwithstanding, parameters incorporated in the design of the research generated particular sample characteristics. These were variable and in some respects British parent ownership influenced the work of West German finance personnel. Hence, Section 5.3 focuses on the specific operational relationships between the cross-nationally matched pairs of companies and locates the cross-national differences in the meaning of industrial accountancy within this empirical context. The explication of both the cross-national context and, within this, the empirical context is a prerequisite to the

analysis, in the following chapter, of the work roles of industrial finance personnel across the two nations.

All references to 'Organisations' refer to the sample companies. Any reference to the corporate level is specifically stated. At this point the reader may wish to refer to **Appendix 2** which contains qualitative descriptions of each participating corporation and the coding used for respondents. Additionally, respondents are located within the structure of their respective firms on the organisation charts supplied by, or those constructed on the basis of information from, respondents at the various research locations.

5.2 HISTORICAL AND INSTITUTIONAL INFLUENCES ON THE DEVELOPMENT OF FINANCIAL AND MANAGEMENT ACCOUNTING WITHIN INDUSTRY

Within the British sample there appeared to be no standard or universal precept applied to the way in which work was organised and divided between these two accounting functions. On a superficial level, much seemed to depend on the peculiar characteristics of each company, such as the nature of the industry and markets, and, more importantly, size. Size was clearly related to the degree of work task specialisation within both financial and management accounting departments (cf Hickson et al 1969) and to the degree of structural separation between financial and management accounting activities within the corporate or company entity. For example, in larger companies the volumes of transactions are such that it becomes economically viable to establish geographically and functionally specific transaction accounting centres: as had, in fact, been established in Organisations I, V, and VI.

Size was also one of several relevant factors in West Germany, not that any of the Organisations had established such accounting centres but that the three largest firms (I, VI and VIII) maintained a structural distinction within the head offices between Buchhaltung (financial accounting) and Betriebswirtschaftliche (business economics). These visible structural components, however, especially in view of the inconsistency throughout the sample, reveal nothing substantive about the relationship between

financial and management accounting. For instance, these activities may not be distinguished in the same way in different companies; within the same company they may be separated, say, in head offices and integrated in operating sites; structural formation does not indicate the nature of the information or human resource flow between these two functions; nor the nature and reasons for change. In short, structural analyses are inadequate without an interpretation of the underlying processes.

The previous chapter drew attention to the anomalies surrounding accountancy in Britain. At an institutional level, legislation does not provide an unambiguous conceptual framework for statutory accounting nor comprehensive regulations prescribing procedure and practice. The occupational organisation, operation and practice of accountancy are self regulated. Within British society accountancy is recognised as a vocational specialisation, reflected in specialised educational provision within the State system which does not differentiate between peculiar specialisms within accountancy. Yet, also at this institutional level, the occupation is highly segmented, there is no consensus on integration, the 'profession' does not speak with one voice as the major constituent bodies keenly protect alleged functional differentiation and promote idiosyncratic images in marketing campaigns to attract new recruits. The vested interests of the accountancy bodies appear less concerned with occupational harmony than heterogeneity. Much of this differentiation is, however, fictional. There is little substantive difference between the

bodies in the sections of the labour market targetted for recruitment, in the nature of the certification and closure mechanisms operated and considerable overlap exists in the content of requisite training.

Apart from the regulations successfully lobbied and statutorily governing the qualifications of auditors, at an organisational level, certainly within industry and the public sector, this alleged accountancy differentiation is shown to be fictional because it disintegrates. Although some significant changes are underway, the reasons for which will later become clear, it was evident that the organisation of accounting work within industry bears no relation to the existence of particularistic accounting qualifications. There were not Chartered vis a vis Management vis a vis Certified accounting departments; employees' work roles, career profiles and opportunity horizons were not found to be influenced by the specific accountancy body which conferred their competence; key individuals may express a personal preference for one qualification rather than another but none of the British sample companies enshrined a particular qualification in recruitment or career development policies. There is, then, no functional basis for the segmentation of the accountancy occupation.

Thus, on a theoretical level, a Parsonian functional or taxonomic perspective does not explain the existence of professional occupational segmentation, rather we have to depart from a point

which considers the dynamics of professionalisation (cf Strauss 1975) and whether or not the conduct of professional strategies is rooted in and legitimised by the dominant ideology of capitalist society, as argued by Marxist analysts.

In the arena of practical reality, the apparent lack of contiguity between the alleged functional specialisms of the accountancy bodies and the functional necessities of industrial accounting organisation means that, whilst definitions of financial and management accounting may be recognised and formalised (see Exhibit 5a below), the conduct of institutes does not contribute to any realisation of this distinction in practice. This is one source of the vexed question of 'what an industrial accountant actually does'. An issue which has challenged academics for some time because the incongruity between the requirements of the occupational system and the industrial system has had three major consequences.

Exhibit 5a

A definition of financial accounting

That part of accounting which covers the classification and recording of actual transactions of an entity in monetary terms in accordance with established concepts, principles, accounting standards and legal requirements and presents as accurate a view as possible of the effect of those transactions over a period of time and at the end of that time.

A definition of management accounting

The provision of information required by management for such purposes as:

1. formulation of policies;
2. planning and controlling the activities of the enterprise;

3. decision taking on alternative courses of action;
4. disclosure to those external to the entity (shareholders and others);
5. disclosure to employees.

The above involves participation in management to ensure that there is effective:

- (a) formulation of plans to meet objectives (long term planning);
- (b) formulation of short term operation plans (budgeting/profit planning);
- (c) recording of actual transaction (financial accounting and cost accounting);
- (d) corrective action to bring future actual transactions into line (financial control);
- (e) obtaining and controlling finance (treasurership);
- (f) reviewing and reporting on systems and operations (internal audit, management audit).

Source: Management Accounting: Official Terminology, ICMA, 1982:

8-11

In the first place, there is the learning process. Accounting and micro/macro economics are available as specialisms within the State educational system, neither of these subject areas address the practical economic realities of business operation in any applicable sense. Under the auspices of professional training, very often the formalised concepts which accounting actors have to consume bear no relevance to the practical task necessities of their everyday working lives. This may be due to a combination of factors: for example, there may be a fundamental problematic with the conceptual framework of accounting which the professional bodies have failed to address (Alexander 1980):

"When you're sort of churned out as a newly qualified accountant....and sent out into the world, you've got this idea in your head that everybody is going to do everything right, there's only black and white and no shades of grey and

what you learn as you get older and see more and more sets of accounts is that there are shades of grey."

(Group Financial Controller, UK Organisation IX)

Or the theoretical concepts may simply be irrelevant in particular working environments:

"I've never used 95 per cent of what I learned in accountancy."

(Respondent 2, Organisation VII)

Or a further problem may be synergistic:

"So the experience in the organisation lags behind the accountancy training, that will have taken you right through in five years but you won't get the opportunity to apply much of that."

(Respondent 3, Organisation I)

Secondly, and it would not be unreasonable to suggest that this is a consequence related to both the absence of prescriptive legislation and educational inadequacies, within the industrial accounting fraternity, there is no consistent conceptualisation of the meanings of and relationship between financial and management accounting. Actors may contend that this is the primary distinction within accounting and may be able to enunciate the standard theoretical definitions (as defined in Exhibit 5a), but in terms of practical tasks, this delineation becomes blurred and uncertain. Or actors do not appreciate any distinction as indicated in Exhibit 5b below.

Exhibit 5b

A comparison of opinions about accountancy: two managers in ostensibly identical positions in identical industries in different companies

"You're able to say what your costs are for various products and therefore there's a very close link between the financial data and the management information, that's what you're going to make your decisions on, the two sets of data are very similar especially in simple manufacturing."

(Respondent 5, Organisation VI)

"Essentially the shorter term reporting we do is decision support but there are elements of all reporting which could be fitted into that category. Now that's in very sharp contrast in my mind to the keeping of the books, the various transactions which build up to the keeping of the general ledger....their main outlet is the annual statutory accounts."

(Respondent 2, Organisation I)

A senior finance manager and his superior

"I'm afraid to say that I've never been able to understand what people say by management accounting....I think it's an artificial distinction....If it's got a pound sign in front of it, it's financial information....This concept of management information is a complete and utter nonsense."

(Respondent 2, Organisation IX)

"I mean producing that, which is the statutory accounts, is no good to me or anyone else managing the business, the board or the managing directors' committee who run the business, they need internal information quickly."

(Respondent 1, Corporation IX)

Without a consistent conceptual industrial accounting paradigm, arguably an axiomatic third consequence is the absence of any standard or universal precept applied to the way work is organised and divided between financial and management accounting. As the reader will ascertain from the organisation charts in Appendix 2 and the tables in Appendix 3, this was certainly found to be the case within the British sample. Conceptual confusion and

organisational diversity are manifestations of the tensions between the historical mystification of accounting knowledge plus the processes of economic and technological change which are beginning to highlight the fictional components (cf Hughes 1958, 1963, 1971 and see Chapter Eight) and anachronisms surrounding the phenomenon of professional accountancy in British industry. The nature and implications of these processes of change will unfold over following chapters, here the principal concern is to explore the distinction between financial and management accounting given by formal definitions because:

1. it is a source conceptual confusion and mystification but not fictional because the functional differentiation between these two areas of work activity is becoming more transparent with increasing economic pressures and developments in technical change;
2. it is not compatible with or recognised by the professional bodies which confer competence according to allegedly different functional specialisms;
3. it is neither a fiction nor a source of conceptual confusion or professional mystification in West German industry.

The previous chapter discussed the significant differences in the legal and educational systems between Britain and West Germany. The codified German legal system embodies a comprehensive conceptual framework for statutory accounting within industry and prescribes detailed procedures, methods and chronology. There is

neither the flexibility nor the ambiguity which prevails in the British industrial accounting arena.

Exhibit 5c

The impact of the legal system on industrial accounting in West Germany

"Law is very abstract, the figures are very real....for everything we have a law, that's the legal culture of this country, even for reporting there is a law.... We can relate deficiencies in data presentation back to the legal requirementsthere are legal requirements that you have to make data visible in a certain format in combination with certain other information."

(Respondent 3, WG Organisation XII)

"In Germany you'll find everything's prescribed by law...the German balance sheet has to be down to the last Pfennig, even, for example, Siemens with a £20 billion turnover."

(Respondent 2, UK Corporation III)

"Here we have a GmbH and an AG law [1] which says, for example, the balance sheet must be prepared in six months after the balance sheet date....they get their accounts done often by a tax advisorHe's more looking after the statutory requirements and tax laws which is a very, very important thing in West Germany."

(Respondent 1, WG Organisation II)

"Oil taxes etc, we have very close scrutiny from the fiscal authorities....it's got to be accurate because when it comes to dealing with the authorities, they tend to be very strict and on the dot."

(Respondent 12, WG Organisation VI)

"Statutory accounting in West Germany....they're very strict in their performance of the routines....you have to show them that on 6 January ten years ago what was the report used for the general ledger....they're very strict and complicated, there's special guidelines for orderly bookkeeping, in Britain you have SSAP etc but these are guidelines for reporting, not for basic accounting."

(Respondent 3, WG Organisation I)

Thus, accounting in West German industry has historically developed according to codified legal prescription, the accounting function is essentially and unambiguously perceived as the bridge between the firm's financial transactions and the statutory

regulations which determine accounting concepts, procedures and reporting requirements in order to promote social accountability.

Given this conceptual clarity in the meaning and purpose of industrial accounting, an initial assessment might find some incongruity in the fact that the State education system does not deliver such a specialism. This, however, serves as a demonstration that the integrity of any social scientific analysis depends on appreciation of its specific socio-economic, historical and cultural context which a considerable body of theoretical literature has failed to observe.

Historically, industrial accounting has had a clear, unambiguous legalistic function, it is accepted as necessary for statutory purposes and is correspondingly perceived as essentially 'administrative'. Whilst it is respected because of the legal knowledge necessary to discharge attendant responsibilities, accounting has never been a central function of business operation, it is in some respects considered a service but bears a lateral relationship to the principal function of 'production'. Thus, accounting administration is distanced from productive activity, this is consistent with other reflections of the German industrial ethos: for example, vis a vis the British context, the higher status given to practical and technical education (Glover and Martin 1986); the higher status and economic rewards of engineers (Lawrence 1980); within West Germany, the relatively higher number of technical as opposed to commercial managers, it

is most unusual for the latter to become chief executives (Sorge 1978, 1979) whereas a large proportion in Britain emerge from finance departments (PA Consultants 1985).

This historically rooted industrial ethic (see, for example, Böhme 1978, especially pages 45-72 and 87-101) was a powerful and essential element of German post-war reconstruction because industrial production was the primary mechanism by which the new Federal Republic could accumulate much needed wealth. The value priority of education was to impart useful, applicable knowledge and skills, emphases lay in a broad general education and vocational training. Neither highly theoretical economics nor narrow administrative bookkeeping were appropriate as the only educational options.

Thus, broad based 'commercial' apprenticeships at a vocational level and 'business economics' at a higher level which imparted knowledge of statutory accounting regulations within the wider financial framework of business operations, were more suitable educational instruments. Increased breadth was incorporated into the system by not confining business economics courses to commercially oriented subjects, instead the system allowed for the integration of business economics into technical education. In this way, knowledge of the financial processes of firms' has been widespread, it has never been the subject of mystification by and monopolisation of a particular 'professional' or socio-managerial cadre.

Here, then, we begin to see two nationally contrasting pictures emerging. Within the British industrial context accountancy began as bookkeeping and, whilst essentially administratively-oriented, developed the status and stature of a central, highly economically rewarded managerial function which is bolstered by the State education system. Though there are signs of change, British industry remains largely dependent on the certification of accountants in a function which has long exercised financial control but sometimes does not distinguish between statutory administration and business management activities.

The independent professional bodies have promoted enclosure partly by constructing a theoretical shroud which obscures the absence of a firm conceptual accounting framework. Justification for institutional permanence derives from occupational specialisation which is patently fictional when the requirements of the industrial system appear to bear no relation to this specialisation. Moreover, all of the bodies articulate their worth and credibility as residing in the 'fact' that they inculcate an occupational value system which compels members to observe of a professional code of ethics, buttressed by members' continued identification with occupational ethos in arenas which might otherwise be less veracious. The findings of this study revealed that:

- a) accountants' self perceptions varied considerably, at one extreme being an accountant was a source of pride and self

esteem, at another extreme 'outside work you would never admit to being an accountant';

- b) of the 62 industrial financial respondents only two had been temporarily involved with their institutes as student members and another two currently held local official institutional positions. In addition, two corporate respondents had had minor involvements with the CCAB. This was summed up as 'desperately time consuming and not very constructive';
- c) reasons for becoming an accountant stemmed from three sources, either 'I couldn't think what else to do' or 'I just sort-of fell into it' or 'it was a good way to get into management'. Neither were these attitudes confined to industrial accountants. Respondent 1, Organisation XII,

"I don't think you'll find many people who look on chartered accountancy as a vocation, you know something you desperately want to do, you just sort-of wander into it....you don't say I really want to go out there and add up peoples' accounts."

Thus, only minimal evidence corroborated the institutional claim that occupational members primarily and continually identify with an occupational value system (cf Child 1982).

In West Germany the statutory administrative function of accounting within industry is founded upon a firm conceptual base, accounting methods, procedures and reporting requirements are prescribed and clarified in law. The accounting function is perceived as a legalistic necessity which occupies a role

distanced from the primary activity of production. Business control has focused on the quality and quantity of products (for example, Horovitz 1978) and financial control only in a retrospective sense, that is, a comparison of the current year's performance to the previous (based on the statutory accounts) rather than to the operating plan, including various forecasts, targets and budgets, for the current year.

Latterly, however, there has been increasing awareness of financial indicators as an instrument of control, this type of management information is considered an Anglo-Saxon import:

"Budgeting is a very well known fact in Britain, it isn't in Germany."

(Respondent 1, WG Organisation II)

"When I joined Organisation III [October 1977] I was very surprised to see how static the thinking was in a German company....Then I saw the reporting which was really based on the Joint Stock Law,....We now have management reportingactual compared to previous year and plan... all monthly comparisons, actual to previous year, the month, then the year to date and then actual to forecast."

(Respondent 1, WG Organisation III)

"Budgeting, let's say, is exported from the Anglo-Saxon countries. It's increasingly used here in West Germany.... They see it has the advantage of being of tool of control and they're using it more and more. Even medium sized and small companies do some sort of budgeting now."

(Respondent 3, German Wirtschaftsprüfer, Organisation XII)

Financial reporting for business management or control purposes - what is referred to as management accounting in Britain - is

therefore relatively innovative. All the West German sample companies prepared some sort of financial management information on standard forms for the British company or corporate parent but in none of the companies was this natively referred to as 'management accounting' nor had this anywhere generated the development of a particular managerial group. This was particularly significant in the three largest and most autonomous companies I, VI and VIII (examined below) because in the head offices were specific 'controller' or 'commercial' departments. Here the wide functional and social distance between administrative financial accounting and the controller (or business economics or management information) department was most visible. These functions were populated by different persona with different types of skills. In West Germany the 'accountant' is the bookkeeper - Buchhalter or Bilanzbuchhalter:

"We always say bookkeeping is the accounting....Buchhaltung is the quantitative work....Herr X who's the leader of this unit, he's the Chief Accountant, he's responsible for the rules, he's telling them which account they have to book the things."
(Respondent 2, Organisation VI)

Whilst the responsibilities of this function conform to the formal definition of financial accounting given above, it is necessary to bear in mind that this is far more complex and exacting than in the case in Britain. Those in controller or commercial departments are Kaufmänner (commercial men) although there is no British linguistic equivalent which means precisely the same.

In these respects the conventional labels of 'accountancy' and 'accountant' - as profession - are indexical expressions. The meaning of these expressions are specific to the national context and these meanings are not directly transferable. The importance of capturing this contextual specificity is that the cross-national disparities in the meaning of accountancy and accounting are integral to the national differences in deeper societal structures, such as the institutionalised form and processes of the legal and educational systems and have clear implications for the organisation of work.

5.3 CROSS-NATIONAL ORGANISATIONAL CONTEXTS

Within the research sample there were considerable inter-organisational differences which affected the nature of the West German business operations and the work roles of the finance personnel employed. Investigation of differences between companies, however, failed to provide adequate explanations for all existing cross-national operational dissimilarities.

5.3.1 Functional Operational Relationships

ORGANISATIONAL SIZES AND NATURE OF BUSINESSES

<u>ORGN NO</u>	<u>SALES TURNOVER (1982/83 £M)</u>		<u>NATURE OF BUSINESS</u>
	<u>UK COMPANY</u>	<u>WG SUBSIDIARY</u>	
I	[a] 512	317	Oil refining and marketing
II	25	16	Industrial/marine paint manufacture
III	445	16	Beer brewing and distribution
IV	£ 1,000	£	Heavy chemicals manufacture
V	£ 847	£	Computer hardware manufacture
VI	ID	ID	Oil refining and marketing
VII	ID	ID	Music/record production
VIII	165	140	Personal products manufacture
IX	12	5	Lithographic machine manufacture

Table 5.1

[a] Thousands of barrels of oil refined per day.
ID = Insufficient or inconsistent data.

As can be seen from the table, organisational size varied considerably within the British sample and was more pronounced between the cross-nationally matched pairs of companies. Company size clearly affected the volume of work undertaken by finance personnel, for example, the number of transactions processed and thus the numbers of personnel employed to conduct such work. Particularly in financial accounting, larger company size was associated with a higher degree of work task specialisation in both countries. All companies in both countries utilised the same basic financial procedures and financial and management accounting measurements, thus size, ipso facto, did not appear to influence the calculation techniques or overall content of work tasks within finance departments: and size was not a nationally specific factor which influenced the nature of work in finance departments.

Whilst the nature of the industry was an important influence on the type of work undertaken in finance functions, it was not a nationally specific factor because between industries there were cross-nationally consistent differences in the amount of certain types of work undertaken in finance departments. The basic difference was between large, capital intensive industries which tended to be industrial suppliers themselves and fast moving consumer goods businesses where a higher percentage of production costs are variable. In the former relatively more recording/analytical time was spent on investment evaluation, fixed costs, return on fixed assets and depreciation. In the latter there was more emphasis on the analysis of marketing information such as

customer profiles and calculations at the margin. This is reflected in the organisation charts presented in Appendix 2 where the large, capital intensive industries are shown to have separate sections for 'capital accounting' more frequently than non-capital intensive industries. The following table summarises the apparent effects of size and nature of industry/market on the work of finance personnel in both countries.

SUMMARY OF THE EFFECTS OF SIZE AND NATURE OF INDUSTRY/MARKET ON THE WORK OF
INDUSTRIAL FINANCE PERSONNEL IN BOTH COUNTRIES

<u>ORGANISATIONAL CONTINGENCY</u>	<u>MAIN INFLUENCE ON</u>	
	<u>FINANCIAL ACCOUNTING</u>	<u>MANAGEMENT ACCOUNTING</u>
<u>SIZE</u>		
-Larger	Higher volumes of 1; more work involved in 2 and 3,	Higher volumes of 1 and 2 [a]; more work involved in 3,
-Smaller	Lower volumes of 1; less work involved in 2 and 3,	Lower volumes of 1 and 2; less work involved in 3,
<u>NATURE OF INDUSTRY AND MARKET</u>		
-High Capital Intensity (industrial mkt)	No influence on 1, 2 or 3,	For 1 relatively more emphasis on capital evaluation analyses - investment, fixed costs, return on fixed assets, depreciation; Less emphasis on 2; no influence on 3,
-Low Capital Intensity (consumer goods mkt)	No influence on 1, 2 or 3,	For 1 relatively more emphasis on variable cost analyses; more emphasis on 2; no influence on 3,

Table 5.2

<u>FINANCIAL ACCOUNTING:</u>	1 = Transaction processing;
	2 = Compilation of profit and loss accounts;
	3 = Compilation of balance sheets.
<u>MANAGEMENT ACCOUNTING:</u>	1 = Compilation of ratio and variance analyses;
	2 = Compilation of marketing statistics;
	3 = Financial forecasting/planning.

[a] The volumes of work in areas of compiling plant ratio and variance analyses is significantly affected by the sophistication of process production technology and the structuring of databases within information systems. This is further discussed in Chapter 8.3.1.

Leaving aside Organisation VII as no data related to mainstream accounting were collected, British ownership was found to influence the work of finance personnel in the West German subsidiaries in three basic ways. Firstly, all of the West German subsidiaries were required to submit various reports on standard forms at pre-determined time periods. It was not possible to assess whether the production of specific financial reports for British business management purposes actually increased the workload of the West German finance departments because this would have to be compared with reports produced for this purpose in indigenous German companies. If these were found to be the same in substance, then it could be argued that the production of these reports would have been undertaken in any case.

However, all of the West German companies produced (Proforma) reports which followed the British construction of profit and loss accounts and balance sheets. None of the West German companies nor the business in Holland would have produced this information in these formats because they did not correspond to indigenous requirements. In Organisations I, II, IV, VI, VIII figures were converted into the British format automatically by dedicated software built into the processing system, in the other cases it was still a manual task undertaken by a departmental head.

SUMMARY OF THE EFFECTS ON THE WORK OF FINANCE PERSONNEL OF THE
FUNCTION AND AUTONOMY OF THE WEST GERMAN BUSINESS

OVERALL FUNCTION OF THE
NATIONAL BUSINESS [a]

-Complete Functional Base	Higher volumes of 1; all work involved in 2 and 3,	Higher volumes of 1; all work involved in 2 and 3,
-Limited Functional Base	Lower volumes of 1; limited work involved in 2 and 3, eg, no production costing, partial operating/trading profits,	Limited work involved in 1, 2 and 3, eg, no production materials usages or efficiencies variances,

DEGREE OF OPERATIONAL
AUTONOMY [b]

-High	No influence on 1; all work involved in 2 and 3,	All work involved in 1, 2 and 3,
-Low	No influence on 1; increased work involved in 2 and 3,	Increased work involved in 1 and 2; limited or no work involved in 3,

Table 5.3

FINANCIAL ACCOUNTING	1 = Transaction processing 2 = Compilation of profit and loss accounts 3 = Compilations of balance sheets
MANAGEMENT ACCOUNTING	1 = Compilation of ratio and variance analyses 2 = Compilation of marketing statistics 3 = Financial forecasting/planning

[a] Within each country, particular business locations fulfilled specific purposes which affected the work of finance personnel in those locations. This is discussed later in the thesis in relation to the major developmental phases of computerised administration systems.

[b] The degree of autonomy was not surveyed according to specific, measured criteria. This assessment is constructed on the basis of senior management opinions as to the degree of operational and strategic decision making exercised by the West German management.

Secondly, British ownership had determined the overall function of the West German business. In all cases except Organisations IV and V these were complete operating entities with the full

complement of functions. Organisation IV was solely a production site, all the production planning, sales, marketing and distribution was organised by the British Divisional Head Office. Organisation V was solely a marketing, selling and distribution operation, all products were manufactured in Britain. In these two organisations a full complement of functional specialisms (for example, research and development, production or marketing, engineering, safety and maintenance) was absent, as were specific treasury [2], 'controller' and financial planning departments or sections.

Thirdly, these financial functions, compared to the British firms, were also substantially under-represented in West Germany in Organisations II, III, IX: and since these companies were involved in the whole spectrum of business activity from production through to marketing and selling, this was not due to a limited functional base. It was apparently due to a limited degree of operational autonomy from the British side. The real nature of autonomy of all the West German businesses was impossible to ascertain, responses varied from "*completely autonomous*" (Organisation VI) to "*not autonomous at all*" (Organisation IX). But it was clear that by 'autonomous' respondents were referring to the degree of strategic planning and decision making responsibility and authority. In this respect Organisations I, VI and VIII were stated as being autonomous by both the senior managerial British and West German respondents. These companies (and Organisation IV) also located operating sites and head offices geographically

apart. Additionally, it was notable that these three companies submitted reports to the British corporate (not company) parent on a quarterly rather than a monthly basis.

RELATIVE ORGANISATIONAL OPERATING AUTONOMY AND REPORTING REQUIREMENTS

<u>ORGN NO.</u>	<u>DEGREE OF AUTONOMY</u>		<u>REPORTS/FREQUENCY</u>	
	<u>UK COMPANY</u>	<u>WG SUBSIDIARY</u>	<u>UK QS & HQ</u>	<u>WG HQ & UK HQ</u>
I	high	high	1=M; 2=M; 3=A; 4=M,	1=Q; 2=Q; 3=A; 4=Q,
II	high	low	1=M; 2=M; 3=A; 4=Q; 5=M; 6=Q,	1=M; 2=M; 3=A; 4=M; 5=M; 6=Q,
III	high	high but decreasing	1=M; 2=M; 3=A; 4=M; 5=M,	1=M; 2=M; 3=A; 4=M; 5=M,
IV	high	low	1=M; 2=M; 3=A; 4=M; 6=Q,	1=M; 2=M; 3=A; 4=M; 6=Q,
V	N/A	low	[a] 1=2A; 2=2A; 3=A; 4=M,	1=M; 2=M; 3=A; 4=M,
VI	high	high	1=M; 3=A; 4=M; 6=M,	1=Q; 2=Q; 3=A; 4=Q; 6=Q,
VIII	high	high	1=M; 2=M; 3=A; 4=M,	1=Q; 2=Q; 3=A; 4=Q,
IX	high	low	1=M; 2=M; 3=A; 4=Q,	1=M; 2=M; 3=A; 4=M,

Table 5.4

REPORTS:

- 1 = Profit and Loss Account (or variation thereof);
- 2 = Balance Sheet (or variation thereof);
- 3 = the Annual Operating Plan;
- 4 = various Management Reports comparing business performance against pre-set targets in the Annual Operating Plan;
- 5 = a separate Cash Flow Statement;
- 6 = a separate Capital Expenditure Report.

FREQUENCY: A = Annually; 2A = Twice Annually; Q = Quarterly;
M = Monthly.

UK: OS \Rightarrow HO represents the reporting requirements of the UK Operating Site to the Company Head Office. ([a] in the OS column for Organisation V signifies this as a transaction accounting centre, not a factory site);

WG HO \Rightarrow UK HO represents the reporting requirements of the West German subsidiary to the Company/Corporate UK Head Office/Quarters.

The table above summarises the reporting requirements within the sample companies. It was felt more appropriate to omit the reporting requirements of Operating Sites in West Germany because of the four located geographically apart from the West German Head Offices only one (Organisation IV) submitted financial reports direct to the British head office.

As was mentioned previously, the West German companies which claimed a higher degree of autonomy tended to submit reports to the British parent less frequently than those with lower degrees of autonomy. It is also interesting to note that there is a higher degree of consistency in the type of reports generated in the cross-nationally paired companies than between the British companies. This suggests, as indeed was often stated, that multinationals standardise and streamline reporting not only to facilitate statutory reporting but also, within the corporate entity, to compare relative performances across different business units and different countries.

Yet, between the British companies, there is some variation particularly, for example, cash flow analyses. It is possible

that the data are incomplete, that is, that the managers interviewed were not responsible for certain aspects of reporting and, consequently, failed to state a complete list when asked. However, with an example such as cash flow reporting, when this emphasis was apparent, it was apparent throughout the different levels of the organisation, thus it is unlikely to have been overlooked. The variation in reporting across the British companies may, therefore, be indicative of the points made in the previous section, that British industrial accounting per se rests on weak conceptual foundations and that the distinction between the constituent elements of financial and management accounting is a source of mystification.

For the West German subsidiaries, it was clear that British ownership determined the overall function, degree of strategic autonomy/independence and influenced the financial reporting requirements. This in turn determined the timing of these reports, the manner in which they were compiled (the calculation techniques used) and the content of work tasks of the employees contributing to or responsible for the their production. However, as the next section demonstrates, the organisation of these tasks and the finance work related to the business operation within West Germany did not appear to be influenced by British reporting requirements or other practices. This was reflected in cross-national differences in the structural organisation of accounting work and profiles of responsibilities of finance personnel.

5.3.2 Structural Comparisons

The table below presents the company locations visited. Organisations marked * indicate the most robust cross-national comparisons as defined in Chapter Three. These include Organisations I and VI because, even though the German Group Headquarters and Company Head Office shared the same geographical location (unlike in Britain), approximately 95 per cent of the German business in each case was oil-related and these oil refining and marketing companies were the subject of the British research.

GEOGRAPHICAL RESEARCH LOCATIONS OF THE SAMPLE COMPANIES

<u>ORGN NUMBER</u>	<u>BRITAIN</u>	<u>WEST GERMANY</u>	<u>KEY</u>
I*	LHQ, LHO, POS, PTAC,	HQ + HO, OS,	L = London
II	LHQ, LHO, POS,	HO + OS,	P = Provincial
III	LHQ, LHO, POS,	HO + OS,	HQ = Corporate Head Quarters
IV	LHQ, PDHO, POS,	OS,	HO = Company Head Office
V	LHQ, RSA, PTAC,	HO + RSA,	OS = Operating Site
VI*	LHQ, LHO, POS,	HQ + HO, OS,	TAC = Transaction Accounting Centre
VII	LHQ, LHO, LRAC,	RAC,	+ = Shared Site
VIII*	LHQ, LHO, POS,	HO, OS,	D = Divisional
IX*	LHQ, PHO + POS,	HO + OS (Holland),	RSA = Regional Sales Area
			RAC = Royalties Accounting Centre

Table 5.5

Clearly, head offices and operating sites perform different functions within a firm's organisational arrangements, any authentic cross-national comparison of the structural distribution of work between these different sites performing different functions will, therefore, require each company paired cross-nationally to exhibit the same geographical arrangements in both countries.

The preceding table indicates that of the total of nine cross-nationally paired companies, I, VI, VIII and IX represented robust comparisons, that is, they were characterised by a similar geographical structural organisation. In both countries, each of firms I, VI and VIII located operating sites and head offices geographically apart whilst company IX located the operating site and the head office on the same site in each country. In this latter case, however, the previous section drew attention to the very limited degree of strategic autonomy of the Dutch subsidiary: and noted that a low level of independence from the British parent had a marked impact of the nature of work performed by finance personnel in the foreign subsidiaries, particularly in areas of financial analysis, planning and forecasting - the business management and controlling activities. In fact, in Britain the site finance function had a department solely for Group Activities (worldwide) and a Budgetary Control Section within the UK Division, neither of these existed in the Dutch site. Thus, besides its siting in Holland, Organisation IX was not considered to represent a robust cross-national comparison. In addition,

although Organisation IV located factory and head office sites geographically apart in both countries, the factory accounting and reporting activities to the British Head Office reflected direct British control over marketing and distribution functions. The visit to the West German Head Office was unavoidably cancelled by the Finance Director, however, in a previous interview at the factory site he stated that the specific responsibility of the Head Office Finance Department was the consolidation of accounts for the British Group's divisionalised operating interests in West Germany and fulfilling national statutory requirements. As can be seen from the organisation charts in **Appendix 2** and the tables in **Appendix 3**, Head Office Finance Departments in both countries were highly specialised although in West Germany five of the eight Organisations (excluding Organisation VII) located their Head Offices and Operating Sites at the same location.

By contrast, Organisations I, VI and VIII not only exhibited the same geographical arrangements in both countries but also each of the West German subsidiaries were said to be operating autonomously. The cross-national structural comparisons in this section concentrate on these three companies whilst **Appendix 3** presents tabulations of the activities incorporated under finance in the other cross-nationally paired companies. Analysis here, of course, rests on a very small comparative sample, nevertheless there are consistent cross-national differences, the significance of which can only be understood by appreciating the processes which underlie structural arrangements.

ORGANISATION I: CROSS-NATIONAL COMPARISON OF THE FUNCTIONAL RESPONSIBILITIES
OF THE FINANCE DEPARTMENTS AT THE OPERATING SITES

<u>BRITAIN</u>		<u>WEST GERMANY</u>	
ACCOUNTING		ACCOUNTING	
-cost accounting		-cost accounting	
-fixed assets		-fixed assets	
-local accounts payable/payments		-product quantities	
-credit control		-local cash	
-local cash/bank accounts		-customs/excise, inland revenue	
-local payroll			
STORES/TRANSPORT		PURCHASING	
-purchasing, technical equipt/ general goods		-technical equipt/general goods	
-car/van drivers		DESPATCH/DISPOSITION (road/rail)	
OFFICE SERVICES		-tank fillers, drivers, admin clerks computer operators, contractors	
-typing, telex, reprographics, computer services		PERSONNEL	
LIAISON		-shortly to become responsibility of Finance Manager	
-with local planning/estates authorities		LIAISON	
REPORTS TO HQ		-with local tax, legal, safety, planning, environmental authorities	
-profit/loss (monthly)		REPORTS TO HQ	
-balance sheet (monthly)		-product quantities (monthly)	
-management/cost report (monthly)		-management/cost report (qtrly)	
EMPLOYEES		EMPLOYEES	
-accounting 14		-accounting 12	
-stores 21		-purchasing 10	
-office services 9		-despatch 59	
<u>total 44</u>		<u>total 81</u>	
-manager 1		-manager 1	
*product accounting done by production planning department			

Table 5.6

The table above shows that, compared to West Germany, in the British operating site of Organisation I more of the finance work effort is related to basic financial accounting functions, such as

accounts payable processing and payments, credit control and payroll for all works personnel. Additionally, all the technical and general goods buying for the works was handled by the site Stores and Transport Superintendent who, after a recent re-organisation, was reporting to the the Chief Accountant (respondent 7).

By contrast, the direct counterpart of respondent 7, the West German respondent 10 (Leiter [4] Versand/Kaufmännisch Verwaltung - literally Leader Despatch/Commercial Administration was clearly considered less of an accounting administrator than a 'technical' administrator. This was reflected in his job title and in his far wider span of well established responsibilities.

In juxtaposition there was a higher degree of centralisation of accounting activities in West Germany. This meant that much of the financial accounting work which was undertaken at the British operating site was a head office function in West Germany: for instance, all accounts payable/payments, credit control and payroll. The consensus of opinion about the mooted possibility of de-centralising this accounting work to the refinery echoed the sentiments of respondent 10: *"No, no, what you can do cheaper and better in head office should be there."*

Here again we see a possible influence of British ownership but certainly the influence of nationally specific institutions. The Federal Republic's complex and comprehensive tax and accounting

laws persuade, especially large, firms of the economic benefits of centralising routine accounting functions. These economic, and thus efficiency, benefits underlie the conceptual approach to electronic data processing. In the head office of Organisation I, the human expertise and the sophisticated computer systems had been established and maintained. According to respondent 3, the Manager of Rechnungswesen (financial accounting), this centralisation permitted not only closer scrutiny of the integrity of the accounting techniques built into systems design and processing but also first-hand monitoring of the accuracy of accounts by the 'named individual' who is legally held accountable for discharging this responsibility. In addition, this higher degree of centralisation meant that *"....you're very flexible as a group to follow new requirements which come every quarter from London"* and frequently at the behest of the West German authorities.

Two further aspects in the table above are notable. Firstly, West Germany's 'civic culture' penetrates deep into factory life. There is a section dedicated to Customs/Excise, Inland Revenue, and from his ample discourse, respondent 10 clearly spent a considerable amount of time with a welter of local and Land offiiciaries.

Secondly, in terms of his span of control, the technical aspects of purchasing and particularly the function of Despatch, relative to his accounting responsibilities, are clearly the major facets

of the work role of respondent 10. This respondent previously had been a tax inspector (considered a distinct advantage), whilst he had had no formal technical education or training, it was not possible to discharge the responsibilities for Despatch without substantive knowledge of the technical components of this function. In Britain Despatch was the responsibility of the Operations Manager, an engineer. Exhibit 5d below illustrates the process of cross-fertilisation of technical and accounting knowledge in the German workplace.

Exhibit 5d

The West German knowledge process: from accounting to technical

"He has acquired a responsibility which goes far beyond this original accounting side.... He knows the technical details of most of the plants to such an extent that he can easily communicate with process engineers. He knows his Despatch unit, not only how long it takes for a lorry to get filled but also the flow velocity, he knows the diameters of the pipes, the power of the pumps. He makes proposals of what could be done to enlarge the capacities....you see having this fairly wide knowledge, he's got very large influence."

The West German knowledge process: from technical to accounting

"My father became a civil engineer....and I attended [university] for three years special additional education in control engineering....Here, at first I try to pick up the accounting side, what's being done in that branch and secondly, I will go and work in other branches, for example, the production side so that I get a more detailed knowledge of their operating modes, the scopes of the plant, the economic behaviour of applying different operating modes....I'll be sitting in the plant side for say three to four weeks, I think that's necessary otherwise I won't know what's going on there."

(Respondent 11, designate of respondent 10, WG Organisation I)

The previous chapter reviewed the formal education system in the Federal Republic and noted how the subject of 'business economics' was not always confined to commercial areas. This is one aspect which adds generality and breadth to education and training. It is not, however, simply a matter of institutional structuring, but underpinned by intangible processes, such as the way values are integral to attitudes held which become reflected in structure. Clearly, the garnering of knowledge takes many forms, in Exhibit 5d above the process was external to the formal education system but the values, say of the primacy of production, of generality and a breadth of understanding, which underpin aspects of formal education, do not cease to exist in other spheres of social life. What this implies is that the process of transferring values and the consolidation of attitudes pre-exists and outlives formal structures. And, a major theme in this thesis is that these values and attitudes are, indeed, culturally bound (Exhibit 5e below). Or, as Sorge (1980:23) has observed "*there can be no culture-free context of organisation*".

Exhibit 5e

A cross-national comparison of attitudinal process

"I'm a chemical engineer, I have no knowledge of accounting at all, no, it's practice....we talk nearly every day, there's no regular meetings but as both sides have been working together for such a long time, both sides have a deep knowledge of what is necessary for the other one and therefore the relationship works very smoothly."

(Respondent 14, Process Control Manager, WG Organisation I)

"I ended up as a toolmaker when I was 29....I can talk to engineers in the language they talk....so often in accounting you get the type of person who's by nature very introvert....apart from their very narrow view, so many of them often think they're right anyway, they know they're right and of course they are not."

(Res. 11, Stores/Transport Superintendent, UK Organisation I)

In Organisation VI (the other oil company), cross-national differences in the structural arrangements of accounting work were more pronounced. The British refinery was the larger of the two in terms of throughput in tonnes per annum and because it also comprised a large chemicals manufacturing capacity.

The following table details the various departments of the sizeable finance function, and of the much smaller one in the West German refinery. Very few of the responsibilities discharged by the finance function in the British refinery were located at the site in West Germany. For example, in the latter all transaction processing, stock and capital evaluations were head office functions.

The two consistent features of the roles of both the West German refinery finance managers were (a) the emphasis on liaison with the civic/governmental authorities; and (b) responsibility for Despatch. The West German refinery of Organisation VI did not have a finance section dedicated to Customs/Excise etc, this was because respondent 12, the Works Superintendent (an engineer) supervised the Betriebs Wirtschaft Planung (literally Factory Economics Planning) department which monitored and reported plant

ORGANISATION VI: CROSS-NATIONAL COMPARISON OF THE FUNCTIONAL RESPONSIBILITIES
OF THE FINANCE DEPARTMENTS AT THE OPERATING SITES

<u>BRITAIN</u>		<u>WEST GERMANY</u>	
ACCOUNTING		ACCOUNTING	
-cost accounting		-cost accounting	
-fixed assets		-fixed assets	
-local accounts payable		-product accounting	
-local cash/bank accounts			
-product accounting		DESPATCH/DISPOSITION	
-monitoring plant efficiencies		-tank fillers, drivers, admin clerks,	
		computer input	
FINANCE SYSTEMS AND PROCEDURES			
SITE ADMINISTRATION UNITS		OFFICE SERVICES	
-telephones, engineering, laboratory		-typing, telex, telephones, mail room	
-oil movements, chemicals			
COMPUTER SERVICES		LIAISON	
-site systems, plant systems, computer		-with customs/excise, tax and legal	
services		authorities	
OFFICE SERVICES		REPORTS	
-typing, telex, reprographics,		-no precise data but unlikely that any	
-library		reports compiled here because all data	
LIAISON		input via VDUs was to main computer storage	
-with local authorities, especially		in head office and directly accessed by	
for rate support grants		head office personnel; and plant efficiency	
		and management/cost monitoring was	
		done by the 'technical' Factory	
		Economics & Planning Department	
REPORTS		EMPLOYEES	
-profit and loss account (monthly)		-accounting	9
-balance sheet (monthly)		-despatch	19
-management/cost report (monthly)		-office services	8
-capital expenditure report (monthly)		total	<u>36</u>
EMPLOYEES		-manager	1
-accounting	62		
-FSP	5		
-SAU	37		
-computer services	66		
-office services	27		
<u>total</u>	<u>197</u>		
-managers	2		

Table 5.7

efficiencies against pre-set standards for the conversion of crude oil into refined products. This responsibility increased his contribution to negotiations with officialdom. In Britain efficiency monitoring and reporting was a finance function within the refinery of Organisation VI but it did not appear to have had the effect of increasing communication with authorities. This efficiency monitoring is a 'control' function over productive activity. In Britain another control function of the finance department was the monitoring of capital expenditure for new construction. In West Germany this was discharged by a specific engineering department. Thus far, at operating sites it appears that technical employees in West Germany accumulate knowledge of business economics both within and outside the formal education system and utilise this knowledge to command control within the productive function: whereas this appears not to be the case in Britain. German commercial personnel, on the other hand, who may actually have originated from an engineering background, seem less inclined to confine themselves to purely financial areas compared to their British counterparts.

Another significant feature of the cross-national comparison of the refineries of Organisation VI was the size of the computer department. In Britain this was the largest department within finance, (66 people compared to the 62 in accounting) which undertook the development of commercial, plant and site systems. In West Germany where it was indicated that the plant systems were more sophisticated than in Britain, technological development was

a 'technical' function. Given that controls are built into computer systems, this again is symptomatic of the higher degree of control over productive activity by the production functions compared to Britain. The absence of a computer department within the German refinery finance department was also related to the higher degree of centralisation of accounting work in the head office, it was inappropriate to establish a computer department within finance at the refinery when so little of the routine accounting was located there. Instead, the refinery finance controller contributed to the technical processes by having assumed responsibility for Despatch. He further contributed by providing a 'service' valued by, rather than an administrative adjunct to, other functions - Exhibit 5f below.

Exhibit 5f

The function of accounting: ethos or rhetoric?

"Well the controller commands a service as far as I'm concerned, what is important to me is that I have someone assisting me in the controlling of costs, assisting me that all these taxation aspects are handled in the proper way, oil taxes etc....I'm, in fact, one of the fellows directly responsible for the proper handling of all these fiscal accounts, when it comes to dealing with the authorities, they tend to be very strict and on the dot....from that point, the controller's a great help because the actual work has to be done by his people."

(The Works Superintendent, WG Organisation IV)

"My opinion of accountants is they tend to be just historians, telling people what's happened....I don't see management accounting is any more predictive, sorry, the actual accountants are not the ones who predict, we're the ones who do the predicting....budget meetings, the accountants are there but only as recorders....The accountants can ask me to justify any payment voucher I've signed as to why I've signed it....They're controlling, making sure that the right signs are on the documents

and that the right amount of money is paid at the right time but the initial decision on whether the money is spent is not the accountants'."

(Manager of Works Personnel Services, UK Organisation IV)

Although it could be argued that the greater size of the British refinery operations necessitated a larger number of site staff, it could be argued equally justifiably that the larger the overall business, the more economies of scale are to be gained by greater centralisation of finance functions, that is, transferring these functions and the information processing involved away from operating sites, purely economic arguments would then suggest a higher degree of centralisation in Britain, which was not the case. Furthermore, size in itself does not explain the German site finance managers' responsibility for the technical area of Despatch and requisite technical knowledge.

Arguably, these features may be indicative of an integral aspect of the German industrial ethos - that the job of factory employees is to produce and not administrate:

"What we do is to run the show without having a big administration job, as few people as possible."

(Financial Director, WG Organisation II)

Correspondingly, the more any one employee knows about the constituent elements of the productive process, the more efficient that process is likely to be, viz the observations and expectations noted above of Respondent 11 in Organisation I: and

the breadth, generality and vocational orientation within the State education system (cf Van Bernem 1978, Lutz 1981, Sorge 1981, Merritt 1985) - accountancy per se does not occupy a specialist niche.

Yet, we have seen that it was possible for actors to maintain a basic distinction between a 'technical' or 'commercial' orientation throughout the stages of formal education where there was no cross-fertilisation of the conventional knowledge elements related to each area. Thus, the structure of the education system alone cannot explain why this cross-fertilisation does appear to occur in everyday working life: that is, the wider functional responsibilities of finance personnel described here and the delivery of finance-related responsibilities by those who would be classified in Britain as essentially non-finance personnel, such as the Works Superintendent mentioned above. This and the inherently related managerial process (of Technik, as discussed in note 4) must, then, be attitudinally-bound, attitudes which reflect particularistic values and are generated from a deeper-seated system of morally significant values - ethos.

Against this backcloth, there were consistent reflections of this attitudinal process in the most robust cross-national comparison of Organisation VIII. Here the the national companies were of similar size, making identical products, operating autonomously within their respective countries and had head offices and operating sites geographically apart in both countries. In

ORGANISATION VIII: CROSS-NATIONAL COMPARISON OF THE FUNCTIONAL RESPONSIBILITIES
OF THE FINANCE DEPARTMENTS AT THE OPERATING SITES

<u>BRITAIN</u>		<u>WEST GERMANY</u>	
ACCOUNTING		ACCOUNTING	
-cost accounting		-cost accounting	
-fixed assets		-fixed assets	
-exports accounting		-materials usages	
-local payroll		-accounts payable control (manual reconciliation of order, delivery note and invoice)	
-company's accounts payable			
OFFICE SERVICES		PURCHASING	
-typing, telex, telephonists, printing reprography		-local technical equipment	
REPORTS		PERSONNEL	
-profit and loss (monthly and company's annual)		-liaison with Works Committee	
-company's trading results		-office services	
-balance sheet (monthly and company's annual)		-kitchen/canteen	
-operating plan (annually)		DISTRIBUTION	
-management/cost reports (monthly)		-warehouse/control	
		-despatch	
EMPLOYEES		*ORGANISATION, PLANNING & DISPOSITION	
-accounting 28		-short term production planning (materials, production line utilisation, personnel)	
-office services 9			
-mgt information 2		* joint responsibility with Technical Manager	
<u>total 39</u>		REPORTS (to WG HD)	
		-production cost reports (monthly)	
-manager 1		-fixed assets reports (monthly)	
		EMPLOYEES	
		-accounting 6,5	
		-purchasing 2	
		-personnel 13	
		-distribution 13	
		<u>total 34,5</u>	
		-manager 1	

Table 5.8

relation to finance personnel, major changes in corporate policies had been instituted in Britain the mid 1970s. These differed somewhat from the other eight corporate entities (see the next chapter) and had begun to manifest in the attitudes of commercial personnel.

The table above shows the principal differences in accounting organisation as the payroll for two operating sites, all the company's accounts payable and the compilation of the balance sheet and trading results were processed in Britain at the main production factory. In West Germany all of these functions were located at head office.

The main operating site in Britain displayed the usual structure of a (technical) general manager and a team of senior managers one of whom was commercial (that is, finance). His responsibilities included supervision of works (including cost) accounting and payroll, transaction processing, a two man team of head office management information providers and office services. In West Germany however, the Werksdirektion (literally works direction, that is, general managers) comprised a two man team, one technical and one commercial (respondent 4). They shared a large subdivided office and, in partnership, enjoyed joint responsibility for the supervision of the Organisation, Planning and Disposition Department and general factory management though either would assume sole responsibility if the other was absent from the site: in some contrast to the British counterpart - Exhibit 5g below.

Exhibit 5g

The British problematic of attitudinal change

"More so in West Germany, they aren't sitting in an accountancy department and just providing numbers for the works manager to make a decision on, they're very much more involved in the running of the factory.

....And the greatest difficulty we have on this site for the site accountants here, is trying to get him [works manager] into the way that we want to operate which is getting involved in the running of the factory and playing a bigger role in it."

(Commercial Manager, UK Organisation VIII)

Once again we see that accounting responsibilities constituted a relatively minor part of the West German Commercial Manager's role compared to his British counterpart. The absence of liaison with the tax authorities within the role of the West German manager was related to the different nature of the industry vis a vis the oil businesses described previously. Nevertheless, the codified legal system impinged through the constitutionally enshrined structure of industrial relations and the formal Personnel responsibilities ascribed to the Commercial Manager. And, although it was not apparent on the formalised organisation chart, the British Commercial Manager had assumed wider involvement in the sphere of industrial relations:

"I would say most of my time for personnel. We have a Works Council here..... And the contacts to the Works Council are normally done by him [the technical manager] and, if it gets more difficult, by me and it takes a lot of time. These are small individual problems, legislative problems etc."

(Commercial Manager, WG Organisation VIII)

"One of our major roles here is talking to all the representative bodies we have, that is, one for the clerical staff, one for the assistant managers and also one for the shopfloor workers....and I get very much involved with the annual wage negotiations and my role in all this is to try and present the company's profits and trading position to them."

(Commercial Manager, UK Organisation VIII)

The major responsibilities for Personnel, Distribution/Despatch of the West German Commercial Manager and his close involvement with factory management and production planning reflected in the manner in which he perceived the primary orientation of his role towards what he called the 'line function', that is, the actual production process. Accounting, as he saw it, was merely a service to this centrally important production function. This service ethic was also apparent in the thinking of the British Commercial Manager but the essential difference was that he perceived the provision of a financial service as his major, rather than minor, contribution to operational activity:

"So these are the functions, oh and accountancy, it's not by chance that I say it last....Whereas in these other fields, in principle, of course, the first line production costs, I work as a controller. I'm not directly responsible for these costs, my technical colleague is, but since we work as colleagues on one hierarchical level, I feel personally also responsible....So in my controlling function, it [accounting] gives me the information I need but it's, a service function for me and for the technical side and I wouldn't say it's the most important in this factory, it isn'tit's not a right in itself, it's just a service."

(Commercial Manager, WG Organisation VIII)

"Together with the site accountants, we aim to provide a complete financial service to the factory manager....everything involved with the cost of running the factory."

(Commercial Manager, UK Organisation VIII)

In sum, it was less unusual in Germany to find finance managers with wider responsibilities, technical knowledge and functional experience than would have been considered conceivable in the British companies. Only two British respondents delivered non-financial duties: the Chief Accountant in the oil refinery of Organisation I responsible for Stores and Transport (this latter referred to site cars/drivers); and the General Commercial Manager of Organisation VIII with production planning responsibilities. None had factory-wide personnel duties. And, as we shall see in Chapter Seven, West German finance personnel played a far more significant part in the computer systems design process than was generally true of their British counterparts.

5.4 SUMMARY

Within British industry there appeared to be a conceptual problematic surrounding the meaning of 'financial' as opposed to 'management' accounting. Whilst there exist formal definitions which distinguish between these two types of accounting activity, in practice this distinction is not consistently manifest in (a) the segmentational delineations within the accountancy profession; (b) accounting actors' conceptual framework; and (c) the organisation of accounting work within British industry. The alleged functional differentiation professed by the self-regulatory accountancy institutes is largely fictional because it has no substantive functional base within industry or the public sector. This has contributed to the conceptual problematic, itself generated by the absence of an unambiguous industrial accounting paradigm enshrined in legislation and now highlighted as a widening cleavage between the functions of financial and management accounting (discussed more fully in Chapter Eight) resulting from the tensions between the historical mystification of accounting knowledge and developments in economic and technical change.

By contrast, in West Germany an unambiguous conceptual framework and attendant complex industrial accounting procedures and tax regulations have long been established within the codified nature of jurisprudence. Accounting is synonymous with the legalistic, administrative function of bookkeeping, an accountant is a

bookkeeper - Buchhalter or Bilanzbuchhalter. Management accounting is not a term routinely used in West Germany, its equivalent function of 'controlling' or 'business economics' or 'management information' has been largely an Anglo-Saxon import but is recognised as having a sharply differentiated function from that of financial accounting. Neither areas of knowledge have been subject to occupational closure, accountancy does not occupy a specialist niche within the State education system or command a specialist occupational qualification. Knowledge of accountancy is transferred within the wider vocational commercial apprenticeship system or within the subject of business economics at a higher theoretical university degree level. Neither is business economics confined to a broadly commercial education, it is possible, though not inevitable, to study this subject within a broadly technical education. In these respects, accountancy has never been the subject of mystification as it has in Britain: and financial and management accounting are indexical expressions, their meanings are not directly transferable across the national context .

In the empirical context, organisational size and the nature of the industry/market was found to influence the work of finance personnel in both countries. Whereas, British ownership of the West German subsidiaries influenced the nature of the work of German finance personnel in in three ways. Firstly, all the West German companies necessarily supplied their British counterparts with financial information in a format determined by the British

side. This influenced the way this information was recorded for British statutory and control purposes and the calculation techniques used. Secondly, where the German operation was not a complete company entity, the full complement of functional specialisms was absent and many of the usual costing routines were non-existent. Thirdly, where the West German companies operated on the basis of limited autonomy, functions such as treasury, controlling, budgeting, financial planning or forecasting were either absent or substantially smaller than in the British companies.

However, none of the factors above can satisfactorily explain the cross-national differences in the structural distribution of financial accounting and control activities within organisations. Regardless of degree of autonomy of the company or whether operations proceeded on a limited functional basis, in all cases there was a higher degree of centralisation of these activities in West Germany (cf Horovitz 1980, Budde et al 1982) although only three cross-nationally paired companies provided a robust comparison as indicated in Chapter Three. In these three cases more financial and management accounting work was conducted at the operating sites in Britain relative to West Germany and since the British companies were larger where more economies of scale would be expected to accrue from greater centralisation of, at least financial accounting activities, company size ipso facto did not appear to be a significant influence on the structural distribution of these activities within organisations.

Significant influences appeared to derive from institutional and related attitudinal factors. The more complex accounting prescriptions in West Germany increase the need for control over procedures and accuracy which is facilitated when accounting is centralised and computerised. The related compartmentalisation of this administrative function is complemented by a perception that that the job of factory personnel in West Germany is primarily to produce and not administer. Correspondingly, accounting per se contributed a relatively minor part to the role of finance (or commercial) managers in operating sites of Organisations I, VI and VIII compared to their British counterparts. Whilst the West German finance managers could not escape the exigencies of their 'civic culture' they were clearly more involved in the running of the factories and, to this end, delivered personnel and/or technically oriented responsibilities which was not the case in Britain. On the other hand, finance related duties, such as the monitoring of operating or capital expenditure costs and the responsibility for 'various accounts' related to the fiscal authorities, were discharged by non-finance personnel.

Compared to Britain, this lower degree of task specialisation is arguably a reflection of the absence of accountancy as a specialisation within the State education system where more broadly based 'business economics' courses are not strictly confined to commercially oriented disciplines. This is not, however, simply a matter of institutional structuring for even when this commercial knowledge is not accumulated within a

technical discipline, a cross-fertilisation of knowledge occurs at the workplace. This is symptomatic of the culturally-bound attitudes and values which underlie educational structuring, that of the primacy of production, the utility of a more general and deeper understanding of the productive processes.

These attitudes and values, different from those in Britain, have underpinned the historical development of accountancy encouraged by the nature of the British legal and educational systems. The morphology of accountancy in Britain is as a relatively narrowly defined 'professional' activity which has also developed the status of a particularly potent managerial group whose members, at present, maintain a strategic advantage within the managerial process. This is perhaps one thread in a managerial process which is itself dissimilar to West German practice. The emphasis which underpins the West German finance managers' role in the 'making and doing' at operating sites is the same emphasis which underpins a managerial ideology oriented towards Technik where senior job holders understand the productive process through specific practical experience and 'stay in touch' with operating realities. In Anglo-Saxon cultures, the legitimation of managerial authority derives from position within an elitist controlling cadre whose members may be located in any type of industry and may always have been distanced from the core activity of production.

Notes to Chapter Five

1. GmbH represents Gesellschaft mit beschränkter Haftung, that is, company with limited liability: AG represents Aktiengesellschaft, that is, joint stock company.
2. What might be called treasury departments in indigenous German companies do not exercise the constellation of functions as those in Britain owing to differences in statutory regulations relating to company law. For example, rules applicable to shareholders' rights, raising funds and revising equity.
3. This was not investigated in Organisation VII because the subject of the research was not within the general areas of financial and management accounting but in the specialist area of royalties accounting.
4. In this study none of the West German sample companies routinely used the title 'manager' although it did occasionally appear on organisation charts translated for UK purposes. Sorge (1978) has drawn attention to the persisting suspicion in the Federal Republic surrounding the notion of 'manager'. Again we are faced with an indexicality of meaning where the context is nationally specific. In West Germany, the term 'manager' retains negative connotations insofar as it is ipso facto associated with a careerist orientation regardless of the nature of any specific industry or sector. This conforms to the 'professional management' ideology within Anglo-Saxon culture which the Germans find lacking in dedication and definition.

Simplistically, the legitimization of managerial authority in Anglo-Saxon culture derives from 'position', in West Germany it derives from 'function' which is sub-divided in the sense of a British comparison. On the one hand, 'Führung' embodies notions of personal power and entrepreneurship, on the other hand 'Leitung' reflects the more 'rational-legal' persona of line management below board level (Sorge 1978). 'Leitung' is further sub-divided into the well established functional identities of 'technical' and 'commercial' - Techniker and Kaufmann. Thus 'Leitung' is distinct from the notion of an 'elitist managerial stratum': it refers primarily to a functional specialism, where the most important is production or other making and doing specialisms, that is Technik, (Glover and Martin 1986) and within which job holders may deliver supervisory responsibilities. In the text of this section we see that the notion of 'Technik' may indeed be valid because the underlying philosophy certainly appears to influence conceptual differences in the organisation of accounting work cross-nationally.

CHAPTER SIX

CROSS-NATIONAL COMPARISON OF THE WORK OF FINANCE PERSONNEL IN BRITISH AND WEST GERMAN INDUSTRY

- 6.1 INTRODUCTION
- 6.2 THE DIVISION OF LABOUR WITHIN INDUSTRIAL FINANCE FUNCTIONS
- 6.3 THE ROLES AND RESPONSIBILITIES OF FINANCIAL AND MANAGEMENT
ACCOUNTING MANAGERS
- 6.4 SUMMARY

6.1 INTRODUCTION

The previous chapter argued that nationally specific institutional forms influenced differences in the nature and organisation of accounting work in British and West German industry. The codified nature of the legal system encouraged the higher degree of centralisation of accounting in West Germany and the nature of the education system influenced a more widespread process of cross fertilisation of tasks and knowledge between technical and more broadly commercial work areas than is the case in Britain between accounting and technical functions. The more specialised and largely non-vocational orientation of the British education system and the requirements of particularistic professional certification tend to militate against this process of cross-fertilisation.

It was further suggested that the British specialism of accounting within industry has developed the status of a particular 'managerial' as well as 'professional' group and that this may be indicative of a managerial process which is itself dissimilar in Britain and West Germany.

Section 6.2 of this chapter pursues the theme of managerial process by examining the social and technical division of labour as a principal influence on the organisation of work within finance functions in Britain and West Germany. Although the direct research focus was not designed to explore the division of labour within economic organisations, subsequently this issue was

found to be unavoidable as consistent cross-national differences in work organisation unfolded during the research process in West Germany. Thus, the purpose of Section 6.2 is not to present an account which informs the labour process debate in any comprehensive manner. Rather, it is a report based on a superficial investigation which begs a final question - how valid is the labour process debate when proponents have tended to ignore the influence of substantively dissimilar social processes across countries which conform structurally to capitalist economic orders? As we shall see, although similar hierarchical working arrangements existed in both countries, there were fundamental cross-national differences in the processes by which actors assumed those hierarchical positions.

Section 6.3 extends the discussion on the organisation of work by examining the nature of work roles and returns to the subject of institutional and attitudinal factors as influences on the cross-national conceptual difference surrounding financial and management accounting. This section, therefore, focuses on the functions of these activities in relation to one another and in relation to the wider division of labour within industrial organisations.

6.2 THE DIVISION OF LABOUR WITHIN INDUSTRIAL FINANCE FUNCTIONS

In this section a distinction is made between the technical and social division of labour. The former refers essentially to work activity - the nature of tasks and responsibilities. The latter refers to associated features of employees' work roles, for example, economic rewards, social status and opportunities for promotion or upward mobility.

Two underlying processes are felt to be important in the relationship between the technical and social division of labour. The first is concerned with establishing competence - the manner in which skills, knowledge and expertise are accumulated (or allowed to accumulate) and how they are defined and measured. The second is concerned with establishing worth - what certain measurements of skills or expertise are held to represent, how these recognised competences are built into a job of work and the criteria upon which this work is valued and rewarded.

One of the principal vehicles in the process of accumulating knowledge and skills is, of course, the education system. Chapter Four explicated the substantive differences, in structure, content and philosophy, between these systems in Britain and West Germany. Pupils leaving school at 16 in Britain with no or few certificates face a very uncertain future. Many go onto Youth Training Schemes. The recent vocational training initiatives in Britain are either limited by region, by functional area of work or both.

Neither are firms voluntarily participating in these schemes, by employing trainees, statutorily obliged to provide a systematic and comprehensive training programme for these young people. Whilst these schemes may be an initial attempt to resolve a British educational disinclination to train people for work within society, the worthiness of this purpose has not, as yet, found general expression within the consciousness of educationalists or industrialists (Exhibit 6a below). So, the end product of this process, certification of 'the vocationally trained person' (for no other specific label exists), does not symbolise attainments which conform to a universally recognised standard of achievement.

Exhibit 6a

Capitalist educational philosophy - for whom?

"We very seldom speak of training or educating somebody; in most cases we speak of Berufserziehung, education for the Beruf or job. We use one word in an academic sense and in the manual and clerical sense; we say that somebody who is doing his lifetime job is performing his Beruf....So training and education are processes which belong together; we don't separate them and say that in schools we educate and in the place of work we train....It means that everybody will have the same chance in his life to do whatever he wants to do....everybody in theory has the same chance."

(Extracts from a lecture given by Professor van Bernem, Northumberland Technical College, Staff Conference, September 1978)

.....

"I don't see my role as somebody teaching them a skill or a trade, I see myself educating them." (A secondary school teacher)

"It is not my job to provide cannon fodder for industry, it is my job to develop a more rounded person." (A headmaster)

"Realistically, success at CSEs and O Levels is not necessarily going to get these children a job or get them to enjoy their lives." (A secondary school teacher)

"We will not be able to continue to compete effectively with the Japanese or the Germans or the French whose young people come out of their systems very much more better able to handle themselves with confidence, with flexibility, with skills to meet the needs of their own particular economies."

(An industrial personnel manager)

(Extracts from BBC 1 Panorama, 'Failing the Failures', 2 June 1986)

None of the finance departments within the British sample companies were training employees in accounting under Youth Training Schemes. And in only one company (Organisation IV) was there a suggestion that it was still possible, though increasingly rare, for a young person to leave school with 'O' or 'A' Levels, begin working in a low level clerical job and eventually rise to a managerial position provided, of course, she/he *'shows the right aptitude and application to study and qualify'* in accountancy.

The following tables indicate, firstly a fundamental point, that accountancy qualifications and increasingly degrees are ubiquitous within British industrial finance functions: whilst in West Germany the range of formal educational qualifications is very much more diverse. Secondly, in Britain accountancy qualifications and university degrees are ubiquitous within managerial strata. Although, university degrees are more commonly held by finance managers in West Germany, once again the range of educational qualifications at all hierarchical levels is more diverse. Moreover, apart from 'O' and 'A' levels, the educational qualifications of the British respondents were the only ones attained.

EDUCATIONAL QUALIFICATIONS OF THE BRITISH RESPONDENTS

<u>QUALFNS</u>	<u>OVER 40</u> <u>SEN/MID MAGT</u>	<u>UNDER 40</u> <u>SEN/MID MAGT</u>	<u>SUPERVISORS</u>	<u>CLERKS</u>	<u>TOTAL</u>	<u>KEY</u>
-D, -A,	3		8	2	13	- = Non-possession
-D, +AQ (A)	8	2			10	+ = Possession
-D, +AQ (E)	2	2	5		9	D = University Degree
+D, +AQ (A)	3	3			6	A = Accountancy Qualfn
+D, +AQ (E)	4	11	4		19	(A)= By Articles
+D, -AQ			2		2	(E)= By Examination
<hr/>						
<u>TRAINEES</u>			2	1	3	
<u>TOTAL</u>	20	18	21	3	62	

Table 6.1

EDUCATIONAL QUALIFICATIONS OF THE WEST GERMAN RESPONDENTS

<u>QUALFNS</u>	<u>OVER 40</u> <u>MGT/SUPY</u>	<u>UNDER 40</u> <u>MGT/SUPY</u>	<u>OVER 40</u> <u>NON-SUPY</u>	<u>UNDER 40</u> <u>NON-SUPY</u>	<u>TOTAL</u>	<u>KEY</u>
M	1		1		2	M = Mittlerereife
A	2				2	A = Abitur
IK	4		1	2	7	IK = Industrie Kaufmann
CD	2	1	1	2	6	CD = College Degree
UD	9	5	2		16	UD = University Degree
TQ	2				2	TQ = Tax Qualifn
B	1				1	B = Bilanzbuchhalter
AQ (Holland)		1			1	AQ = Accountancy Qualification
MBA (" ")	1				1	
<hr/>						
<u>TOTAL</u>	22	7	5	4	38	

Table 6.2

In West Germany the possession of vocational qualifications and a college/university degree were not mutually exclusive (see following table), several of the degree holders had initially attained their commercial Lehre before subsequently embarking upon degree courses. Thus, the table above understates vocational experience and certification within the German managerial stratum. Conversely, the processes of establishing competence and worth in British management are dependent solely on possession of more elitist university degrees and exclusive professional certification.

This contrast also reflects a major difference in the perception of education between Britain and West Germany. In the former education is a distinct social phenomenon which precedes the real business of earning a living. In the Federal Republic, education is seen as essentially complementary, though not as stringently a predecessor, to working life. Hence, temporally there is more fluidity within the German education system. Yet possession of formal academic qualifications is no guarantee of movement up the company hierarchy. Thus, fluidity also attaches to the nature of managerial competences these formal qualifications are held to represent. As an indication of managerial capability, a 'professional' accountancy qualification is an irrelevance because no such thing exists. Clearly, then, professional organisation in Britain and the philosophy and structure of the nationally disparate education systems reflect in the dissimilar nature of educational attainment characterising the division of labour

within industrial finance functions cross-nationally. These differences become magnified when the processes of establishing competence and worth are further examined.

All of the West German companies and the one in Holland routinely employed commercial apprentices and, as is statutorily required, provided a training programme which included work experience in all non-technical departments. In Organisations II, III, VIII and IX, this programme also included periods of time in laboratories in an analytical quality control function. The West German respondents contended the advantages of this system were that employees:

- (a) developed work interest naturally through practical involvement;
- (b) accumulated theoretical knowledge alongside practical skills and thus were able to relate theory to practice;
- (c) understood the symbiotic relationship between firms' different functional departments and thus developed an appreciation of the wider implications of work tasks in any one department;
- (d) were less specialised and thus more easily transferred between departments or between sections in the same department.

The process of establishing competence in finance departments in West Germany is intrinsically based on experiential exposure to a wide commercial environment, the achievement and assessment of technical competence arises from practical experience for which there is no formal educationally certified substitute. On the one

hand vocational education is organised to combine both technical theory and practical experience, and on the other hand the careers of employees recruited as college or university graduates (with or without vocational qualifications) inevitably span a wide range of functions and grass-roots experience of the 'making and doing' within business enterprise. In West Germany it was inconceivable for a senior finance manager with any financial controlling responsibility not to have had exposure to the practical operating realities. This was not the case in Britain.

WORK EXPERIENCE OF FINANCE MANAGERS IN FIRMS' HEAD OFFICES IN
BRITAIN AND WEST GERMANY [1]

	<u>BRITAIN</u>	<u>WEST GERMANY</u>
<u>COMMERCIAL APPRENTICESHIPS</u>	NA	6
<u>COMMERCIAL MANAGERS [2]</u>	2	1
<u>HO DEPTS</u>		
Financial Accounting	15 [3]	9
Management Accounting	15	9
Computing	1	7
Export	--	1
Marketing	--	1
Management Services [4]	2	NA
Central Planning	--	3
Economics	--	3
Operations Research	1	2
<u>LOCATIONS</u>		
Factories [5]	7	6
Field Selling	--	2
Number of Respondents	19	12
No Data for	<u>4</u>	<u>1</u>
Tabulated information for	15	11

Table 6.3

(Notes in parenthesis are given at the end of this chapter)

The sample above, which is representative of the total sample, demonstrates, firstly, that there is a clear reflection of the entrenched specialist function of accountancy within British vis a vis West German industry. Except in Organisation VIII, in Britain it was unusual for accountants to have worked in any function other than financial and management accounting. Conversely, in West Germany it was unusual to find respondents who had only worked in financial and management accounting functions. (In later chapters, we shall note the significance of the tendency in West Germany for finance employees to have worked in computer departments.) Thus, whereas in Britain institutional factors have encouraged the development of accountancy within industry as a technically and socially distinct occupational and managerial group, the nature of institutional organisation in West Germany has militated against this development.

Secondly, in West Germany more importance is attached to practical work experience in non-administrative functions particularly for finance managers of controlling or business economics departments. The importance of the concept of 'learning by doing' which underpins the accumulation of skills and expertise and the managerial process in German industry was also reflected in the average length of tenure in certain positions (cf Child and Kieser 1979). It was not uncommon for respondents to have occupied the same post in the same function for five, ten or even fifteen years: although longer tenures were less common within controlling or business economics than financial accounting departments where

longer learning periods are contingent upon the complexity and comprehensiveness of statutory regulations. In Britain, managerial respondents customarily moved into different accounting positions every three or four years and within large industrial firms, the relatively less importance attached to practical work experience was coupled with an almost universal reliance on university degrees and professional qualifications as indicators of both technical and managerial competence.

A content analysis of accountancy syllabuses and examination questions reveals the high degree of theoretical ability necessary to attain certification conferred by one of the bona fide institutes. This certification, however, does not, indeed cannot, adjudge managerial capability nor unquestionably determine technical competence, yet the major yardstick which determines an employee as a technically competent managerial candidate, as an accounting professional, and which is synonymous with 'expert', is this paper qualification. Although, it is fundamentally a yardstick which measures 'theoretical' expertise, because it is also a managerial prerequisite, it carries profound implications for the social division of labour, that is, it also confers eligibility to the stratum of 'controllers' as opposed to the 'controlled', thereby also conferring advantages in terms of economic rewards, social status and opportunities for upward mobility. The following Exhibit 6b indicates the widespread scale of this intellectual elitism in Britain.

Exhibit 6b

A British triumph of intellect over wisdom?

"Now accountants are expected to have degrees, that has been the unfolding situation."

(Respondent 3, UK Organisation I)

"I wouldn't have been recruited without an accountancy qualification, that's probably more important."

(Respondent 1, UK Organisation III)

"There's an entry point now which has really gone up the scale....so our recruitment now is very much more slanted towards poly graduates, graduate intake is from, for example, business degrees....and find themselves in a group leader role, so there's a very clear path for the ones who show the right aptitudes and application to study and qualify."

(Respondent 3, UK Organisation IV)

"So there's this shift up, a few years ago 6 'O' levels were regarded as quite reasonable educational levels but not today.... Clerical is CSE and 'O' levels, in the technical and professional grades you would expect someone to have an academic or professional qualification, that covers people from 'A' levels, degree and post degree levels....by the end of 3-4 years they've qualified, they're then able to move into a technical grade."

(Respondent 3, UK Organisation V)

"There's two groups, List A people who are mainly the management group and then there's List B, the non-management though they're supervisors. People at senior supervisor level tend to stay in the job 3-4 years, really there's a split at this level, most of the people at that level are graduates, it's 99 per cent certain that the qualified accountant would be someone with a degree."

(Respondent 6, UK Organisation VI)

"I never finally completed my qualification, that's one thing I do regret now because, although I can move around within a company, I can't necessarily move around at the level I'd like to and if I wanted to leave this company, I would probably have to think of going down a bit."

(Respondent 3, UK Organisation VII)

"The way that Organisation VIII has worked over the last few years is that they've taken managers into the corporate training scheme, developed them as managers which has meant movement into various parts of the organisation, they won't be stopped from doing that just because they haven't got a formal accountancy qualification and that's an indication that in this particular position, you don't spend much time looking at the financial side of the business."

(Respondent 4, UK Organisation VIII)

"As far as I'm concerned, the only role that the ICMA have is that they allow me, by being in that Institute I have this job, without them I wouldn't have been able to get this job."

(Respondent 5, UK Organisation IX)

"Accounting is another interesting thing, it's to do with prestige, an awful lot of directors in British public companies are accountants."

(Respondent 2, UK Organisation II)

The contradistinction in this process is the relative disadvantage of employees categorised as 'clerical'. Formal job grading schemes are instruments which perpetuate a systematic theoretical hence socio-technical division of labour. One of the primary criteria utilised in the evaluation of a job of work is the assessment of the educational level required to perform its composite tasks and discharge responsibilities: and, given that British education does not generally serve to provide working skills, there is arguably a conceptual dislocation in the importance attached to paper qualifications. Apropos of this initial stance, work is designed upon an assumption that limited educational achievement is symptomatic of equally limited occupational ability. In other words, there is a reluctance to raise thresholds of responsibility above that (somewhat arbitrarily) deemed possible according to formal educational levels. Contrastingly, as the following Table 6.4 indicates, the nature of the processes of establishing competence and worth in the Federal Republic permit actors to assume wider and higher level responsibilities at a relatively lower level of formal educational achievement.

WORK TASKS OF NON-SUPERVISORY FINANCE PERSONNEL IN THE WEST GERMAN FIRMS

WORK TASKS IN WEST GERMANY

PROBABILITY IN BRITAIN

Transaction Accounting

reconciliation/coding of customers' invoices	certain
reconciliation/coding of suppliers' invoices	certain
data input to computerised processing system	certain
preparation of suppliers' payment slips	likely
credit control -contact debtors	certain
-contact suppliers	certain

Analysis/Preparation of Reports

travel expenses	unlikely
sales statistics	possibly
investment evaluation	unlikely
product quantity/tax	unlikely
operating budget/trading accounts	very unlikely
cash flow	very unlikely
profit and loss/balance sheet	very unlikely

Liason

ad hoc contact with other functional departments	possibly
regular meetings with other functional department managers	very unlikely

Computing

systems analysis/modification	definitely not
systems specification/implementation	definitely not
systems monitoring	definitely not
experiment/programming personal computer systems	definitely not

Planning/Monitoring/Re-structuring

distribution costs (with senior distribution manager)	definitely not
specific product costs (with senior product managers)	definitely not
marketing costs (with senior marketing manager)	definitely not

Decision Making

information management	definitely not
accounting procedures	definitely not

Table 6.4

[The data above comprise a checklist of the collective work tasks executed by the nine West German non-supervisory finance personnel, three of whom possessed college and two university degrees. The table was compiled with supplementary information from British finance managers who provided accurate indications of the nature of clerical work in large British firms.]

In addition to the relatively low thresholds of responsibility of clerical employees in Britain, the absence of any statutory State-endorsed vocational training schemes, the general disinclination of British firms to provide adequate training for employees (Mangham and Silver 1986) and the continued insistence on paper qualifications as key requirements for upward mobility are tantamount to mechanisms which concur with Doeringer and Piore's (1971) dual labour market thesis. The findings of this research suggest that the central and distorting feature within the processes of establishing competence and worth in the British accounting workplace is the almost total reliance by large firms on narrowly defined institutional measurements, which are de facto questionable, if not unreasonable, indicators of occupational (particularly managerial) capability: coupled with a tendency to disregard the worth of individual characteristics and the knowledge/skills garnered over time through practical experience.

"It's a bit of a disadvantage because although you've got the experience, you haven't got the paper qualifications."

(Supervisor, UK Organisation V)

"The rest of us are grade four which is one of the lowest grades....there was a time when you could come into a company and work your way up but there's so many people coming into this company now and going straight over you....I'm not a career person but I'd like to get a bit further."

(Clerk, UK Organisation VIII)

The general observation within West Germany, as indicated by the tables above, was that although there was a reliance on institutional measurements of attainment, reliance was less deter-

ministic, measurements far less narrowly defined than in Britain and were intrinsically based on practical experience - a material phenomenon which in itself commands a higher level of esteem and value in the Federal Republic. This is observable, for example, in the very fact that there are different and non-transferable meanings attached to the label 'clerk' in Britain and the German equivalent Kaufmannische Angestellte (commercial white collar worker). The former represents an office employee of no fixed ability except that it is of the lowest order and does not signify managerial potential. The latter represents the employee's Beruf or profession. Within any given field of commerce, this label generally denotes a recognised breadth and level of theoretical knowledge and working skills. And it is possible to progress from this basis into a management position - Exhibit 6c below.

Exhibit 6c

A German triumph of wisdom over intellect?

"Normally all people are educated and well trained....for example a secretary, you would ask for a girl with a two years education, that's a Beruf....but they have to learn some basic accounting operations too....and there are a lot of these women who qualify, and one of the managers in our staff department for pension funds etc, she started as one of these two years people."

(Respondent 3, WG Organisation I)

"Rather often people who do the apprenticeship are very good practically with a much broader knowledge than a person coming from the university....often you find the people with university degrees are some sort of lonesome people continuing their studies in their work time for themselves and not for the company. These people are not good workers."

(Respondent 1, WG Organisation II)

"We have most types of apprentices and we found by experience that its absolutely worthwhile to educate our apprentices because after

they've finished their apprenticeship and become Industrie Kaufmann, then they're very good employees....Herr X, he's an Industrie Kaufmann, with the company for more than 23 years, then he went into the EDP section and learnt programming. So he did everything and now he heads the Operating section because of his knowledge and experience."

(Respondent 1, WG Organisation III)

"There are several different types of apprenticeships....I would prefer young people with a wider knowledge of where the input is coming from, where the input goes to and what's the reason for that specific functionHerr X, he did an apprenticeship and then by working quite hard, he managed to come into that (managerial) position."

(Personnel Manager, WG Organisation V)

"We, in West Germany see whether you can do it and if you can we don't ask for exams....I started down the line somewhere with this apprenticeship and then took my studies at Hamburg University....One other example, he finished primary school at fifteen and then took an apprenticeship and now he's director of a company and responsible for the accounting section."

(Respondent 2, WG Organisation VI)

"We have 6 or 7 apprentices, they learn all the things in school and they're trained by one guy, there's job rotation of course....If we wanted someone in this department, we would ask for Industrie Kaufmann."

(Respondent 1, WG Organisation VII)

"If I was employing a management accountant, I would definitely ask about his past career....'what have you done in the past?'. I would look for similar experience. What I'm saying applies to the first level of management....the basis of experience has to be very solid."

(Respondent 1, WG Organisation VIII)

"I started on a very low level like stock administration, you build up your knowledge of these things in a company....I had the chance to become the boss of the bookkeeping department and then later West Germany [sales/distribution] came to it. Just by doing it, you're learning it."

(Respondent 1, Dutch, Organisation IX)

It is apparent then, that the processes of establishing competence and worth in the accounting workplace are cross-nationally fundamentally different. In West Germany, the approach to the attainment of formal educational qualifications is more fluid, and

more flexible in terms of both the technical and social value attached to these achievements. Accountancy itself is set within a broader commercial framework where practical experience and competence command a high degree of worth and are important mechanisms influencing the social division of labour.

By some contrast, the parameters and processes which underpin the technical and social division of labour within the functionally specialised British accounting workplace pivot principally around the singularity of elitist and exclusive educational achievement and professional certification. These attainments are held to be indicative of managerial competence based on the assumption that they represent 'professional' expertise.

British accounting professionals and theoretical perspectives have alluded to both technical and judgemental or discretionary elements of professional expertise, or as Jamous and Peloille (1970) suggested, technicity and indetermination. Whilst the codifiable aspects may be susceptible to computerisation and relevant work tasks transferred to a group of sub or para-professionals, the indeterminate judgemental quality of core professional knowledge cannot be programmed and is, therefore, insulated from codification and securely confined within the 'professional' arena. At the same time it has been assumed, and alleged by the accounting bodies, that professional certification accredits those conferred with both these elements of professional expertise. In other words, the paper qualification is held to

represent the holder's possession of qualitative, esoteric professional knowledge. Even if the knowledge inherent in any occupation could be classified in this way, this allegation is fundamentally flawed. In practice, viz Exhibit 6d below.

Exhibit 6d

Exploding British accountancy fictions

"The ICA are almost criminally insane in the standard they've set for evaluation of stock.

Then there's the story of accountants being interviewed for a job and asked what's 2 plus 2. Two of them say that's 4 and the third one says 'well what sort of number were you thinking of?'

Someone somewhere is going to sit down and calculate 36 different variances which no production director will understand but it keeps a lot of cost accountants in a job.

Accountancy is an art form, full of judgement, absolutely fullthe judgement functions come at my level and just below me.

Getting qualified as an accountant is 10 per cent of being an accountant.

There was a sixth sense as to what the impact of anything was....It's just experience, seeing what's done in lots of other companies."

(Group Financial Controller, UK Organisation IX)

The accountancy bodies have created accounting standards and defined procedures upon highly tenuous, moving concepts and successfully mystified theoretical knowledge whilst claiming to confer technical and judgemental, hence managerial competence. However, when managerial accounting professionals in this study were asked what they believed to be the essence of professional judgement they replied that it was 'sixth sense', 'an instinct',

'a feeling' or 'intuition'. When further asked how they suspected this intuition had developed, they said it arose from experience of doing the job. In fact, many suggested that it had nothing to do with study and qualification processes, at most they utilised perhaps five or ten per cent of what they had had to learn.

Whilst this may be an understatement, the West German dimension of industrial accounting incontrovertibly illustrates that British accountancy certification is not a necessary pre-condition of the development of either technical or esoteric professional knowledge: because, firstly such certification does not exist in West Germany and, secondly, as was described in Chapter Five, there was no substantive cross-national difference in the overall content of work of finance personnel particularly where the West German companies operated autonomously within their national boundary. Moreover, since the West German finance managers clearly had also developed this judgemental occupational element unquestionably on the basis of practical work experience, there is a strong case for suspecting that British accountancy certification within industry does no more than represent a 'theoretical' ability.

As we review findings in the following chapters, we shall discover that this theoretical knowledge is indeed susceptible to computerisation and that there are no technical barriers to the transference of related work tasks to differently or less educationally qualified employees. The British accountancy bodies have been

remarkably successful in instituting and sustaining technical and social closure mechanisms within industry based on a theoretical definition and measurement of certain capabilities. This is the weakness of their position and of industrial accounting professionals in general.

Additionally, as accountancy certification does not exist in the Federal Republic, it is patently superfluous to a buoyant capitalist economy but in West Germany the content of this qualification is incorporated within the broader accumulation of commercial knowledge and skills in the State educational system. The model for developing 'expertise' is intrinsically rooted in the concept of 'learning by doing'. Following chapters will also argue that there is a sound basis for suspecting that technological change in Britain will promote the importance of broader business knowledge/skills and perhaps wider practical work experience which is insubstitutable. Indeed this may already be happening with the employment of MBAs as financial analysts and the policy orientation of certain companies to provide operating experience for their 'commercial' personnel who do not necessarily need to qualify in accountancy.

This scenario poses a major imponderable for British accountants. If a 'theoretical' paper qualification which is assumed to signify professional expertise does not actually appear to provide any protection against the possibility of a differently or less educationally qualified employee assuming responsibility for

previously professional work tasks, especially when these are computerised (cf Mumford 1979), and British industry begins to favour the recruitment of less specialised employees in finance functions, what will be the implication for the social position of accounting professionals and the bodies which have hitherto so successfully promoted social closure within industry?

Few British respondents expressed fears of deprofessionalisation (cf Haug 1975, Ritzer 1977) as a future possibility. Generally accountants remained firmly convinced of the security of their professional role and social standing. The suspicion is that they were naturally disinclined to consider any other scenarios and thus did not draw attention to the current potentialities and/or actualities of delegating computerised 'professional' work tasks to non-accountants. In other words, as the more advantaged managers in a segregated workforce, accountants were understandably unable to muster the political will to envisage, much less put into practice, the transference of tasks to outsiders, especially those ascribed a clerical status within the firm.

This, however, is unlikely to be the reason why the potential for transferring tasks was also hardly mentioned in West Germany simply because the institution of industrial accountancy does not exist and the parameters which define and measure financial expertise cannot be compared with entrenched British standards. Concomitantly, the issue of a current or potential technological threat to the role and status of the peculiarly distinctive

profession of accountancy within industry does not arise. Thus any discussion of technical 'professional deskilling' or proletarianisation must allude to the specific British meanings of 'professional' and its corollary 'expert'.

The issue of proletarianisation itself finds significance within the wider labour process debate. Protagonists in this debate have alluded to socio-political processes as inevitable manifestations peculiar to capitalist economic orders (for example Braverman 1974, Gorz 1976, Carchedi 1977) where professional occupational organisation derives power from the dominant ideology characterising capitalism (for example Johnson 1972, Gyarmati 1975). This critical perspective, whilst perhaps a useful analytical instrument in an Anglo-Saxon context, clearly requires some refinement if it is to embrace an explanation as to why occupational labels bear significantly different meanings, not as mere semantics or imagery but as material products of deeply rooted and fundamental cross-national ontological differences in value-orientation, attitudinal phenomenology, institutional organisation and socio-political processes in similarly capitalist economic orders. And which have real differing implications for the everyday organisation of work.

6.3 THE ROLES AND RESPONSIBILITIES OF FINANCIAL AND MANAGEMENT ACCOUNTING MANAGERS

Thus far we have explored a number of phenomena which indicate that the industrial function of accountancy is far less specialised in the Federal Republic than in Britain. In the German context we have noted that:

- (1) accountancy does not constitute a specialised subject in formal educational curricula, nor is it subject to specialist professional certification in industry but business economics courses may be incorporated within technical degree subjects;
- (2) consequently these formal qualifications are not managerial prerequisites within industrial finance functions;
- (3) generally at the non-supervisory level, respondents appeared to deliver a higher degree of responsibility, that is, more involvement in analysis, preparation of reports, planning and monitoring, liaison with other functions at a high level, certain areas of decision making; and computing activities which would almost certainly be the prerogative of computer specialists in Britain;
- (4) managerial responsibilities at operating sites consistently extended beyond the purely financial, variously incorporating personnel, computing and, less emphasis on the administrative function was complemented by more involvement in, the technical activities (distribution/despatch) integral to factory operation;

(5) beyond the wider commercial experience central to the system of vocational training, the career profiles of head office respondents, and of respondents generally, indicated routine movement through several different functions. Of particular note was that whereas in Britain none of the finance managers has assumed their positions without experience of working in financial and management accounting departments, this was not always the case in West Germany. Thus, although practical work experience and/or theoretical knowledge of both types of activities was accumulated through vocational traineeships and business economics degrees respectively, the ability to perform effectively in either function was not perceived as necessarily dependent on having had work experience in both.

A corollary to this last point was the existing span of responsibilities of the head office managerial respondents referred to in the last section. The following Tables 6.5. 6.6 and 6.7 detail and compare these respondents' work tasks and responsibilities cross-nationally. The tables exclude data collected at British corporate headquarters because there were no comparative locations in West Germany but data for Organisation IX (combined head office and operating site in both countries) has been included with the integration of Dutch and West German data. The tasks of departmental financial accounting and management accounting managers and more senior finance/commercial managers are tabled separately because there were work task differences in both countries according to this formal role description, especially those tasks

essentially related to financial or management accounting and treasury functions.

The headings of the tables indicate that cross-nationally there was a great deal of similarity between the overall content of work tasks and nature of respondents' responsibilities: and Table 6.7 shows a closer resemblance in task profiles of the most senior managers compared to those responsible for either financial or management accounting. Thus, the higher the hierarchical position, the more similar the tasks and responsibilities across the two countries. The similarity here may have been influenced by British ownership of the West German subsidiaries but this remains conjectural without comparisons between indigenous British and German firms.

Nevertheless, the tables also indicate a degree of variability between respondents' respective work activities. This variability was influenced by a number of factors (a) company size which, in turn, influenced the height of each firm's hierarchy and degree of work task specialisation accorded to constituent managerial positions; (b) relatedly, each respondent's position within the firm's hierarchical structure; (c) idiosyncratic delineations of responsibilities within firms' particularistic structural forms; (d) cross-national differences. The emphasis in this section draws attention to differential features of working arrangements which appeared to have been influenced by the nationally-specific context.

CROSS-NATIONAL COMPARISON OF WORK TASKS AND RESPONSIBILITIES OF HEAD OFFICE
FINANCIAL ACCOUNTING MANAGERS

	<u>UK</u>	<u>VG</u>
<u>Number of Respondents</u>	5	4
<u>Financial Accounting</u>		
-consolidation of firm's subsidiaries' periodic/final statutory accounts	5	1
-consolidation of accounts for tax purposes	-	1
-conversion of accounts for UK purposes	NA	1
-ad hoc accounting queries/problem solving	4	2
-internal audit	-	2
-company payroll	1	-
<u>Management Accounting</u>		
-consolidation of firm's/subsidiaries' periodic management accounting reports	4	-
-provision of information for management control purposes	-	1
<u>Miscellaneous</u>		
-credit management, property, fixed assets, stocks/stores/purchase control	-	1
-stocks/oil accounting/invoicing (plus reports)	-	1
-capital expenditure (plus reports)	-	1
-firm's purchase/stores function	2	-
-insurance	1	-
<u>Analysis/Monitoring/Planning</u>		
-departmental/sectional function/operation	3	2
-strategic accounting developments	2	1
<u>Computing</u>		
-supervision of head office computer function	1	-
-supervision of departmental computerisation	3	1
-systems analysis/design	-	3
-program specification	-	1
<u>Liaison</u>		
-finance board member of other firms in corporate group	2	-
-ad hoc intra-functional meetings/project teams	3	3
-regular intra-functional meetings/project teams	-	3
-ad hoc inter-functional meetings/project teams	2	3
-regular inter-functional meetings/project teams	-	2
-ad hoc/regular inter-national meetings	-	2
-regular presentation of financial results	-	1
external organisations		
-accountancy bodies	1	-
-tax authorities	-	1
-auditors	3	1
-computing agencies/software houses	1	1
-other companies	1	1

<u>Treasury</u>		
-cash flow appraisal	2	1
-financial input to acquisitions/disposals	1	-
-taxation	3	1
-currency exposure	1	-
<u>Policy/Decision Making</u>		
-accounting policies/principles/procedures	4	1
-content of published accounts	2	-
-strategic accounting developments	1	-
-departmental re-structuring	1	-
-departmental computerisation	3	1
-departmental personnel, staffing/training/managerial appraisal-promotion	2	2

Table 6.5

CROSS-NATIONAL COMPARISON OF THE WORK TASKS AND RESPONSIBILITIES OF HEAD OFFICE
MANAGEMENT ACCOUNTING (CONTROL) MANAGERS

	<u>UK</u>	<u>W6</u>
<u>Number of Respondents</u>	3	3
<u>Financial Accounting</u>		
-consolidation of periodic/final statutory financial accounts	1	-
<u>Management Accounting/Controlling</u>		
-consolidation of firm's performance results (against plans)	2	-
-consolidation of group's performance results (against plans)	-	1
-consolidation of firm's annual operating plan	1	-
-consolidation of group's annual operating plans	-	1
-preparation of strategic business development options	1	1
-prepn of strategic options related to changes in financial markets	-	1
-provision of financial service to operating functions	-	1
-ad hoc controlling/fiscal queries, problem solving	2	3
<u>Miscellaneous</u>		
-preparation of meeting agendas, recording minutes	-	1
-preparation of sales reports	1	-
<u>Analysis/Monitoring/Planning</u>		
-preparation of group's budgets	-	1
-preparation/profitability (plus reports)	1	2
-preparation of short-term/annual forecasts (marginal analyses, earnings ratios)	1	-
-preparation of grup's short and medium term forecasts	-	2
-capital investment/disinvestment, aquisitions/disposals appraisal	-	1
<u>Computing</u>		
-systems analysis	-	1
-introduction of micro computing systems/program writing	-	1

Liaison

-ad hoc intra-functional meetings/project teams	2	2
-ad hoc inter-functional meetings/project teams	3	3
-regular inter-functional meetings/project teams	1	2
-regular inter-national contact	-	1
-ad hoc meetings with management of other firms in corporate group	1	-
-regular meetings within corporate group	-	1
-presentation of group's performance to board/management	1	1
-presentation of strategic development options of board/management	1	1

external organisations

-auditors	1	-
-tax authorities	-	1
-financial institutions	-	1
-professional associations	-	1
-information agencies	1	1
-other companies	1	-

Treasury

-cash flow management	-	1
-financial input to acquisitions/disposals	-	1
-currency exposure	-	1
-funds investment	-	1
-credit supply/agreements	-	1

Policy/Decision Making

-accounting procedures	1	-
-information content/format of reports	1	1
-information management	1	1
-departmental personnel, staffing/training/managerial appraisal-promotion	1	1

Table 6.6

CROSS NATIONAL COMPARISON OF WORK TASKS AND RESPONSIBILITIES OF HEAD OFFICE
FINANCE/COMMERCIAL MANAGERS/CONTROLLERS

	<u>UK</u>	<u>VG</u>
<u>Number of Respondents</u>	4	4
<u>Financial Accounting</u>		
-all financial accounting work activities	3	2
-consolidation of firm's/subsidiaries' periodic financial statutory accounts	3	3
-internal audit	3	1
-payroll	-	2
-cashier's office	-	2
-export sales invoicing	-	1
-ad hoc accounting problem solving	3	4

Management Accounting

-all management accounting work activities	3	3
-consolidation of firm's/subsidiaries' periodic performance results	3	4
-consolidation of firm's annual operating plan (including budgets/targets)	3	1
-consolidation of group's/subsidiaries' annual operating plans	-	3
-provision of financial service to other functions	2	4
-ad hoc controlling queries, problem solving, investigations	4	4

Miscellaneous

-direct responsibility for operating sites	1	-
-stock control/administration	-	1
-insurance	-	1
-office services	-	1

Analysis/Monitoring/Planning

-sales analysis/administration (service to sales/marketing departments)	1	2
-budget appraisal	3	4
-capital investment appraisal	3	2
-cash flow appraisal	3	2
-performance/profitability appraisal (against plans)	3	4
-consolidation of short-term and annual forecasts	3	-
-consolidation of short and medium term forecasts	-	4
-involvement in short term and annual business planning	3	-
-involvement in short and medium term business planning	-	4

Computing

-supervision of head office computer function	-	1
-supervision of departmental computerisation	1	-
-analysis of company's systems	-	1
-systems specifications	-	1
-introduction of computerised systems	-	2
-program writing in high level languages	1	2

Liaison

-ad hoc intra-functional meetings/project teams	1	4
-ad hoc inter-functional meetings/project teams	3	4
-regular inter-functional meetings/project teams	1	4
-ad hoc/regular inter-national meetings	2	2
-advice to board in budget approval process	1	3
-advice to board on strategic business development	2	2
-advice to board on commercial/control issues	2	3
-regular presentations of performance results to management	1	3

external organisations

-other corporate subsidiaries	1	1
-other companies	-	1
-civic authorities	-	3
-financial institutions	1	-
-auditors	3	1

Treasury

-cash flow management	1	-
-currency exposure	1	-
-taxation	1	-

Policy/Decision Making

-accounting policies/procedures	2	1
-information content/format of reports	1	1
-nature of management controls	1	-
-departmental re-structuring	1	1
-departmental computerisation	1	-
-departmental personnel, staffing/training/managerial appraisal-promotion	1	2

Table 6.7Judgemental Tasks

Differential elements of judgement may be integral to a wide range of work tasks though these elements are most often perceived as synonymous and easily identified with strategic, policy and decision making tasks. Within finance departments cross-nationally, the extent of indeterminate work tasks, such as those relating to qualitative decision making, was not always consistent with comparative organisational positions. For example, in Britain decisions related to accounting procedures were always the prerogative of a senior departmental manager whereas in West Germany there were instances when this responsibility was delegated to a middle manager, or even, (viz the previous section especially Table 6.4) to a non-supervisory employee (see also the following Chapter Eight especially Exhibits 8c and 8d). In this case, cross-national differences may be related to conceptual clarity and legalised nature of industrial accounting in the Federal Republic: thus an employee may accumulate knowledge of the

fixed rules over time through practical experience and, regardless of positional seniority, will be able to exercise judgements of this type. This is reflected in Table 6.5, the relatively few number of policy/decision making tasks conducted by financial managers was due to their being undertaken by subordinates.

By contrast in Britain, arguably the intrinsic ambiguity and diffusive nature of industrial accounting promotes a perception that the exercise of these types of qualitative judgements requires, firstly, professional certification which is alleged to reflect the possession of requisite technical or even esoteric knowledge: and, secondly, managerial expertise because it is only at higher organisational levels where experience over time can be rendered as a framework within which to interpret the fluidity and conceptual ambiguity of accounting standards. Only in exceptional cases in large British companies can this managerial expertise be garnered without a formal accountancy qualification.

There appears, then, a rigid circularity which strongly influences the structural organisation of accounting work in British industry, particularly in respect of who is and who is not able to exercise judgemental functions. In addition to differential underlying processes, this rigidity exists to a far lesser degree in the West German industrial arena because, as the evidence suggests, the arsenal of accountancy knowledge and skills is not a legitimated monopoly of a particular occupational and managerial group.

Financial/Management Accounting and Control

What did appear to be more rigid in West Germany, however, was the distinction between financial accounting and financial reporting for control purposes. In Britain, the continuing close liaison between these two types of activities is shown in Table 6.5 where four of the five formally designated financial accounting managers were responsible for compiling/consolidating management accounts. In the Federal Republic only provision of actuals data to controllers' departments was generally the extent of involvement in the financial control function of financial accounting personnel. Also in Table 6.5, more treasury functions (conventionally regarded as high status) in Britain seemed to have been developed or annexed by senior financial accounting actors (traditionally chartered accountants). But in West Germany, with the possible exception of taxation, treasury like financial control, was perceived as a function which supports the strategic operation and development of the whole business entity. Thus, responsibilities such as cash flow management, currency exposure and funds investment were often ascribed to senior financial control positions - Table 6.6.

Planning

That business economics or controlling in West Germany was more distanced from financial accounting and closer to business operation within a wider commercial perspective vis a vis management accounting in Britain was indicated by the planning functions (Exhibit 6e below) and horizons in each country (Table

6.6). In all the British companies, management accounting was concerned with operating plans and business forecasts for the future short-term, one-year period. Thereafter, business planning/forecasting became Group Economics or Central Planning department activities. In all the autonomous West German subsidiaries, formalised operating plans spanned the following year whilst outline plans and forecasts spanned the medium-term, five years hence. This five-year time horizon was the point at which Central Planning assumed the long term planning activities, it was perceived as representing the point of contact between business economics (that is, management accounting) and the formal planning function.

Exhibit 6e

Controlling business economics - a different mentality

"Financial accounting is very closely connected to the legal requirements....they have to adhere to very strict rules....the accountant in the very narrow sense is still a very important function with an administrative approach....But on the controlling side I have more to do with planning, people should be more imaginative, a more entrepreneurial approach....we send them out to a refinery or marketing centre....then to the controlling job inside here [head office]....then into the retail side again....then he knows very much of the controlling requirements."

(Res 2, HQ Manager, Business Economics/Finance, WG Organisation I)

"Historically these are quite different groups and not just by them sitting in different rooms but also they're different types of persons....The financial accountants you would call bookkeepers in the British sense, these others are the professional accountants."

(Res 2, OS Commercial Services Manager, WG Organisation IV)

"The normal bookkeeping chap, regardless on which level, has to be accurate in the right time. Within controlling I've got two units, one for actuals and one for forecasts....even here you need two mentalities, you need one really accounting man who asks what

about that 5 Pfennigs, on the other side you've got the forecaster who says who says are we talking about one or two million?"

(Respondent 2, HO Controller, WG Organisation VI)

"At the end of the 1960s the idea of financial accounting was as at present but the word 'controlling', the management accounting role was completely unknown. So in the early 1970s he [Commercial Director] started to build up an organisation, management accounting on the one side and financial accounting on the other."

(Res 1, HO General Commercial Manager, WG Organisation VIII)

The close relationship between the German business economics and planning functions is more significant than it sounds for, as the Exhibit above indicates, it necessitated a meeting of minds between controllers and planners, these incumbents were required to share a similar visionary and entrepreneurial mentality which was deemed very different from the meticulous, administrative approach essential to efficient financial accounting. Whilst in Britain, there appeared to be an inchoate awareness of the need for differing personalities between financial and management accounting (the importance of this is more fully demonstrated in Chapter Eight in relation to technical change), none of the management accounting managers had worked in Central Planning functions: all of the senior West German controllers has done so.

Computing

Activities related to computing and technical change marked a major shift between the two countries in managerial perceptions of what responsibilities in this area should be, and what they actually were.

CROSS-NATIONAL COMPARISON OF FIRMS' COMPUTER DEPARTMENTS AS PART OF FINANCE FUNCTIONS

ORGN	BRITAIN		WEST GERMANY	
	COMPANY HEAD OFFICE/OPERATING SITE		COMPANY HEAD OFFICE/OPERATING SITE	
I	Y	Y	Y	N (PSO)
II	None	N	None	NA
III	Y	N	Y	NA
IV	N	Y (CM)	ND	CS only (CM)
V	Y	N (TAC)	None	NA
VI	Y	Y	Y	N (PSO)
VII (RA)	N	N	N	NA
VIII	Y (CM)	None	Y (CM)	None
IX	Y (CD)	NA	None	NA

Table 6.8

Y = Yes: N = No: ND = No Data: CS = Computer Services:
 NA = Not Applicable (HO + OS on same site):
 CM = Commercial Manager: CD = Commercial Director:
 TAC = Transaction Accounting Centre: RA = Royalties Accounting:
 PSO = Plant Systems Only because HO centralisation of accounting.

As Table 6.8 above indicates, in both Britain and West Germany it was usual to find the head office computer department under the supervision of a finance manager, although this was normally at a high level, the finance manager being a main board director or the most senior manager at a particular location. Cross-national differences were not found in the structural organisation of this responsibility but in accordant practical work activities related to computerisation, as shown in Tables 6.5, 6.6 and 6.7.

In the British companies, computer departments had historically maintained a particularistic identity. With few exceptions, computer personnel were individuals who, on the basis of career intention, had formally studied computing at some stage; the

computerisation process was normally generated within the user department, potential users or beneficiaries defined their requirements of computer systems to be implemented; henceforth, the analysis and design, specification, programming, documentation and implementation of computer systems were undertaken by the computer function. Any 'technical' input from users was limited to model-building in high level languages, typically spreadsheet packages for use on micro computers. (The systems design process is discussed in more detail in Chapter 7.4.) Only two of the total of twelve head office managers had actually worked in the firm's computer department.

Notwithstanding the presence of some formally trained experts in computer departments in the German subsidiaries, this function had often been established by attracting from other functions those personnel who 'had a feel' for computing. Commercially-oriented operations research, economics and controllers' departments were the oft-cited sources of recruitment into computer departments. Once again the fluidity of this inter-functional transference of personnel appeared integral to weaker reliance in the Federal Republic on formal educational criteria complemented by a stronger dependence within the knowledge process on 'learning by doing' than was characteristic of the British industrial arena.

The nature of the recruitment and learning processes underlying the maintenance of computer functions in West German industry had tended to militate against the mystification of computing

activities which was evident in the British companies - with the possible exception of Organisation VIII. Complementary practices in the Federal Republic reinforced a non-isolationist policy of and towards computing functions and seemed to have further eroded any mystification and monopolisation of computing activities. Firstly, especially in the larger firms, the appointment of a co-ordinator briefed to liaise between user and computer departments had been a practice established at the outset of any computerisation of accounting information systems. In most of the British firms this practice was cited as relatively recent. Secondly, there appeared to be few organisational obstacles to prevent finance personnel working in computer departments as a routine career movement. Seven of the eleven West German head office managers had done so: an established policy of Organisation VIII was to place newly recruited, potential commercial managers in the firm's computer department for the first two or three years of employment.

Thirdly, in all of the West German subsidiaries which did not import computerised accounting systems from the British parent, the responsibility for initial systems analysis, design and specification was normally delivered by the user department. (Even where the foreign subsidiaries imported systems designed in Britain, such as Organisation IX, systems analysis and the design modifications to accommodate local needs were role elements of finance personnel.) As the computerisation process moved forward, the computing function assumed its role at the programming stage -

programming, coding and documentation. Both functions collaborated in the final stages of testing and implementation. The cross-national differences in the processes of technical change are examined in more detail in the next two chapters.

The significance of the contrasting cross-national boundaries in the division of labour underlying the computerisation process was that West German finance managers, in considerably overstepping conventional British territorial responsibilities, not only displayed a higher degree of computer literacy which facilitated social communication with computing personnel, but also necessarily 'kept in touch' with departmental manual working arrangements and subsequent developments in the man-machine interface. The nature of the innovation process within administration may be held as both a principle and reflection of West German managerial Technic where the emphasis is placed on the development of practically useful personal skills as one consequence of becoming involved in 'doing' whatever has to be done (cf Bessant and Grunt 1985). Herein lay a general contrast to the more distanced or 'arms length' (cf Glover and Martin 1986) approach of British finance managers.

Liaison and Control

The 'keeping in touch' element of managerial Technic, viz the importance of functional interrelationships, was also demonstrated by the regularity and frequency of internal/external liaison (see Tables 6.5 and 6.7). This, however, was not solely an attitudinal

phenomenon but integral to the complex web of social values, institutional specificity and appropriate work organisation. On the financial accounting side, the mandatory system of 'partner accounting' (where separate accounts must be maintained for every supplier and customer), influenced an holistic approach to work organisation. Rather than high degrees of work task fragmentation, a single (usually non-supervisory) employee tended to assume responsibility for all stages of transaction processing related to certain accounts. This not only increased the transparency of accountability, especially important owing to the close scrutiny from officialdom, but also facilitated the resolution of queries from and liaison with external trading partners. Even in the largest German companies, many reports suggested that first line managers tended to 'think strategically', resolved more difficult accounting issues and provided tuition/support in a regular, formal seminarial context. Low levels of clerical task specialisation were also found in other departments, for example the Payroll Section, Personnel Department of Organisation I, where one clerk assumed responsibility for a number of named employees and henceforth dealt with all aspects and queries related to payment levels for those employees: for example, tax, insurances, institutional fees, bonuses, holiday and overtime pay.

In Britain, only fragmentary evidence suggested that the work of clerical employees was organised on the basis of an holistic responsibility - the Credit Control Section at Level A in Organisation IV where clerks assumed responsibility for certain

named debtors; and the Accounts Payable Section at Level C in Organisation VIII where clerks were allotted a number of suppliers according to name in alphabetical order and conducted the whole invoicing process. In these cases clerical work necessarily involved liaison, usually via the telephone, with external trading associates (and the amount of external contact was found to be a common criterion in job grading schemes). Generally though, external liaison was confined to a managerial role and staff meetings with clerical subordinates were not reported as a regular feature.

The West German practice of regular meetings, often ostensibly related to procedural and tax issues, also extended, albeit less frequently, to accounting managers at operating sites. None of the British head office financial accountants suggested that sectional/departmental meetings or face-to-face liaison with accountants at operating sites occurred on a regular basis (Table 6.5), whilst the intra-departmental meetings of management accounting or senior finance managers (Tables 6.6 and 6.7) were reported as embracing only managerial or senior supervisory incumbents.

Inter- rather than intra- departmental liaison appeared to occupy more time of the management accounting and finance/commercial managers in both countries. Since management accounting includes both retrospective and projective analyses and financial quantification of business performance, dissemination of this information

across different functions would be expected. Seminarial presentations, including evaluations, of companies' financial results to head office managements or main boards and ad hoc tasks, such as assessment of different broad business development options were senior management responsibilities in both countries, either the first or second manager below the company/subsidiary main board financial director. Although, as Chapter Eight will indicate, it is important to note that hierarchies were generally shorter in the West German subsidiaries. Whilst the influence of company size cannot be discounted, the height of management hierarchies is also related to a tendency or disinclination to delegate down responsibilities. This tendency appeared more prevalent in the German firms (Chapter 6.2, and following Chapter Eight).

In the British companies generally, liaison between finance managers and managers of other functions often assumed an ad hoc or problem-solving quality whilst in West Germany, as with intra-functional liaison and at operating sites, there was a preference for meetings across functions to be organised on a regular basis as the main forum for evaluating ongoing business performance. In other words, meetings provided the control linchpin. It was in this context that findings in West Germany appeared to suggest a major difference in the conduct of control over productive relations relative to Britain. In the previous chapter attention was drawn to the long standing British accountancy function of budgeting and financial analysis for business control purposes:

and how these techniques have remained the, possibly mystified, prerogative of accountants. In Britain the primary functional emphasis of business control appeared to be finance. It was also evident in the previous chapter that budgeting, as an instrument of control, was a relatively recent Anglo-Saxon import into the Federal Republic, although 'costing calculations' were often ascribed particular sections and recognised as 'a well known fact' or long established techniques.

The West German respondents certainly exhibited a high degree of customer awareness and associated knowledge about or concern for the quantity and quality of goods produced. This may be taken as indicative of production as the primary functional emphasis of control in the West German subsidiaries (cf Horovitz 1978, Lawrence 1980) but this included the financial aspects of production, such as costing calculations, as an integral part of operational efficiency. Correspondingly, as Exhibit 6f below indicates, both production and finance respondents in Germany indicated that the primary responsibility for exercising financial control over the production process lay with the production function - though a secondary responsibility lay with the controller's department and ultimately this was seen as a 'team effort'. That the production function is manifestly able to deliver the responsibility for financial control is largely a result of the widely disseminated nature of 'business economics' education within the State system, the common practice of technical personnel to attain second degrees in economics, the

prevalent cross-fertilisation of technical and accounting knowledge at the workplace and the absence of an institutionalised industrial 'accountancy' niche within German society. These are culturally specific attitudinal and institutional factors.

More prevalent in Britain appeared to be the mystification of accounting knowledge. Without access to this knowledge, the production function is clearly unable to exercise the financial control which has been a long standing primary functional emphasis of control over business operations in British firms. Business control is, thus, ultimately retained within the finance function (Exhibit 6f overleaf).

Exhibit 6f

The 'control' problematic

"We begin with the annual operating plan which will have some financial outcomes on some assumptions...those things really drive our bottom line result....so we're looking how we've done against our targets....it also has a monthly focus in terms of managing the business, it's really input into the business management process which takes place through a meeting of the Chief Executive and one or two senior managers."

(Respondent 3, HO Manager, Management Accounting and Control, UK Organisation I)

"The local management reporting is handled by the cost control side and they produce the detailed cost tabulations for each budget officer at the refinery, and commitment control, that's looking at the control before you actually get the invoice in.... For those aspects we consider critical we control at two levels, (1) when you raise the paperwork and (2) when the invoice actually comes in and the work has been carried out."

(Respondent 7, OS Chief Accountant, UK Organisation I)

"All the decentralised units have got to produce once a year a plan...they're not doing it on their own but in this department there is a controller responsible, and he is more the partner of

the centre manager of this operating unit. So my understanding of controlling is not rigidly controlling what other people are doing but assisting a partner. They're doing that together and against this plan monitoring is taking place....if there's no match then the controller together with the operation manager responsible discuss how they could come back on track or decide the route should be another, adjusting the plan. I think this is very important, a co-operative relationship between the controller and the operating manager."

(Res 2, HO Manager Business Economics/Finance, WG Organisation I)

"The main responsibilities of the production department is planning of how the refinery will operate, the next is the control of the refinery, how this operation is being done and it will be supervised here and the third is the accounting....not actually cost comparisons, the Technical Büro look at these cost developments."

(Res 14, OS Process Control Manager (an engineer), WG Orgn I)

.....

"Simple refining is unprofitable so the way you have to make your money means going a stage further....so you take that part which is below your average cost then put it through another process, it's those processes which we aren't very good at monitoring."

(Res 5, HO Manager, Management Accounting, UK Organisation VI)

"On the chemical side we work on a standard costing basis, products and budgets, whereas the oil, our job is just to convert it as efficiently as possible. So here we don't look at it from the profitability point of view, all we do is see what plants we've got and which products and increase that performance gap between actual and standard as much as possible."

(Respondent 6, OS Manager, Accounting, UK Organisation VI)

"I feel a wide range of responsibilities, seeing that everyone is looking at his budgets, meeting his targets....I make sure that the figures they [production] use for steering their business are used in the proper way and that they use the same figures in principle that we use up here.

(Respondent 2, HO Controller, WG Organisation VI)

"I'm in fact one of the fellows directly responsible for the proper handling of all these fiscal accounts, what is important to me is that I have someone assisting me in controlling costs, he [controller] issues the paperwork which enables me to check up on how the development of costs are going. He has a job of controller, assisting me that all these taxation aspects are handled in the proper way."

(Res 12, OS Works Superintendent (an engineer), WG Orgn VI)

.....

"I currently have responsibility for planning, buying and the commercial accounting activity of the company....my tasks to a large extent are ones of arranging for the company to take

decisions in an organised manner and making the board aware of the implications of those decisions."

(Res 3, HO General Commercial Manager, UK Organisation VIII)

"We aim to provide a complete financial service to the factory manager, so we're interested in levels of wastage, variances, efficiency of the product lines, how many people we have, everything connected with the cost of running the factory....one of the works managers regards the site accountant as an integral part of his team but the Works Manager here, perhaps because he worked abroad for 17 years, the accountants start off as being the numbers provider and we have to do a number of devious things to work around that....Generally there's quite a lot of commercial awareness by people like production, buyers and it's only come about with an educational process over the last five years."

(Respondent 4, OS Commercial Manager, UK Organisation VIII)

"My job is to control and run the company from a commercial point of view. The commercial factory managers, their job is to manage, together with their technical colleague, the entire factory operation.

(Res 1, HO General Commercial Manager, WG Organisation VIII)

"Accountancy is giving me the opportunity to control, select and report the figures to my boss and at the same time to control the functions I have here where I'm really influencing the costs. Whereas in these other fields, the first line production costs, I work as a controller, I'm not directly responsible for these costs, my technical colleague is....So in my controlling function it gives me the information I need but it's a service function for me and the technical side and I wouldn't say it's the most important function in this factory."

(Respondent 2, OS Commercial Works Director, WG Organisation VIII)

Whilst the formally instituted financial reporting routines clearly effected a similar mechanism of control in both countries, underlying processes, and thus the concept, of control appeared complex and problematic: yet the responses of interviewees suggested a broad cross-national distinction in the orientation of the financial controller and the perception of the function of financial control. Although it is important to stress that the situation is slowly changing, at present in British industry there remains a relatively wide social, experiential and commercial

distance between those with responsibility for the activity of manufacturing and those with responsibility for the financial constructs which control manufacturing. Financial control information was fed upwards to the apex of the organisation where, relative to lower levels, it was received and evaluated with a strong outward orientation to performance in financial markets vis a vis the comparative performance of other economic units.

These emphases were somewhat different in West Germany. At operating level there was a relatively narrow social, experiential and commercial distance between those with respective responsibilities for manufacturing/financial control activity and those who assist in the financial evaluation of productive activity. Head office managers suggested that the flow of financial control information was continually upward and feedback downward to the point of production via liaison mechanisms. This, perhaps together with the structure of industrial relations, may also have contributed to what appeared to be a higher degree of company-wide consumer and commercial awareness in the German firms: product-market orientation did not appear as strictly confined to upper hierarchical levels as in Britain, although at head office levels financial-market awareness appeared weaker than in Britain.

What this indicates is that in order to understand the substantive nature of control within industrial enterprises it is not adequate to focus attention solely on formalised structures, procedures or documents. Rather, it may be more instructive to concentrate on

the manner in which actors operate within and make sense of the formal arena and the values which underlie different modes of operation and interpretation. Here, the findings appeared to suggest cross-national differences in the conduct of and perceived relationship between those responsible for financial control and those for production. Whilst British ownership of the German subsidiaries may have influenced, say, a higher financial-market orientation of British head office finance managers, the apparent cross-national differences surrounding the nature of control over productive activity is also intelligible in an historic and wider socio-economic context. The following is one interpretive scenario.

A Wider Interpretation

In Britain, the products of accounting appear to be imbued with an almost reverential veracity by those seeking to sustain or increase the value of their investments in industrial concerns. British industry is funded from two principal sources, bank lending and shareholding. The former is of lesser importance. As part of the financial system originally established to fund overseas investment and to handle money (A Question of Economics, Channel Four, 14 February 1987; World In Action, ITV, 23 February 1987) financial institutions, especially banks, are constantly criticised for an historical lack of risk orientation, a disinclination towards and inadequate expertise concerning long term strategic investment in British manufacturing. Banks are

alleged to operate at arms length to industrial enterprise (1986 CBI Conference; This Week Next Week, BBC 1, 25 January 1987).

Shareholding, however, plays a major role. With secondary regard to the distribution and strategic importance of expenditure within a company, the 'confidence' extended to company performance by such reified organs as 'the City' or 'the market' disproportionately depends on projected and published figures, especially bottom line profits. Pension funds in particular continually trade large share tranches depending on the perceived source of greatest profits. This trading activity, geared largely to short term monetary gain, determines the value of a company, influences shareholders' dividends and bestows high status and economic rewards to those involved in the financial arena. Hence one major attraction for Britain's brightest graduates who view the world of finance as more exciting than the world of industrial production.

The temperamental nature of market valuations and thus company fortunes exerts pressures within industrial enterprises to apply strict control to productive operations. Moreover, this control is applied in the financial language understood by 'the market'. Correspondingly, actors who understand this language, and who may have sustained the mystification of its meaning, perform the global functions of capital by exercising control over the productive process (or the collective labourer) in order to ensure that the timely expropriation of labour product into profit is seen to be maximised. Hence, finance and production functions

occupy contrarious positions, the former exists to maximise surplus value, the latter is charged with maximising productive effort even though adequate investment may be withheld: their relationship is characterised by continued social and experiential distance. At least within finance, arguably there is little perceived need to reduce this distance because, legitimated by the nature of capital markets, higher political authority is vested in the finance function in order to exercise a power of veto and restraint over the productive process.

The operation of capital markets in the Federal Republic, however, is fundamentally different, influenced largely by the establishment of a financial system during the Second Reich specifically to provide long term finance for industrial investment. West German society continues to recognise the possible detrimental effects on firms when their perceived value is subject to the volatility of share trading. Thus, much stricter rules surround share issues, a smaller proportion of equity is openly traded and the West German banks remain bound to manufacturing industry (Kloss 1976:92-95). Rather than 'the City' or 'the market' intent on short term profits, the relationship between banks and firms approaches a partnership based on a shared long-term prospectus.

"By custom the German banks play a larger role in the economy of their country than do their British or American counterparts....bankers on the boards of a very large number of industrial companies act as midwives, managerial consultants and sometimes overseers to a degree unthinkable in London."

(Crawley 1973:172)

Bottom line figures and the timely publication of accounts are relegated below the importance of, for example, the distribution of internal expenditure on research and development, design, capital investment and training because it is these parameters which are perceived as the major influences on wealth creation. Historically and currently, the conception of wealth creation within the Federal Republic focuses not on paper profits but on the quality and quantity of exported goods.

Correspondingly, by contrast to the British situation, workers and occupations which are located in the core process of production are ascribed higher social status with commensurate economic rewards (cf Sorge 1979, Lawrence 1980 and 1986, Mant 1983, Glover and Martin 1986), are formally represented within the structure of industrial decision making and, through State education and organisational policies, are armed with the knowledge of business economics. The underlying value priorities which influence the operation of capital, rather than distancing financial from other forms of control, serve to legitimise the exercise of financial control as a primary responsibility within the productive process. Although the sample companies were German subsidiaries of British owned firms, differing German value priorities were manifest, for example, in the knowledge process (Exhibit 5d) which was viewed as necessary by both formal financial control and production functions to reduce the social and experiential distance between them: and in the perception of the function of financial control, this was not as a primary or overriding power of veto/restraint

but existed to provide a service to the productive process in the forms of, say, financial advice and analysis.

What appears to emerge from this scenario is that, firstly, whilst capitalist economies may create certain pressures in the social system to move in one direction rather than another (cf Jamieson 1982-83), this does not necessarily imply that these pressures will manifest in the same forms. Secondly, although capitalist economic forms are concerned with the expropriation of labour product into profit, the priority attached to this vis a vis wider socio-economic concerns, the constituent mechanisms of expropriation and the nature of distribution of resultant surpluses may be different with differing consequences for the 'global functions of capital' and the 'collective labourer' (cf Carchedi 1976), such as the relative standing and control responsibilities of technical and commercial industrial functions. Ultimately, questions arise concerning the adequacy of labels utilised by Marxist analysts, whether these can be maintained as distinctive and characteristic of all capitalist economic orders. We will return to this argument in Chapter Nine.

Decision Making

The capital-labour power imbalance is also a distinctive feature of Marxist analyses. This area of decision making authority was difficult to evaluate without access to, say, meetings, over a period of time. Variations appeared to exist between corporate enterprises in the degree of strategic decision making authority

delegated to the managements of constituent operating companies. Only three of the West German companies (Organisations I, VI and VIII) were found to be operating autonomously. Here it was evident that strategic decision making authority was the preserve of the highest managerial echelons. Only two West German respondents were representative of this category - respondents 1 in Organisations I and VI. The low degree of operating autonomy in the other companies clearly circumscribed senior managerial contribution to decision making.

In both countries, all other head office respondents, and those in locations of combined head offices and operating sites, occupied positions at varying levels of seniority. None, however, appeared to exercise any strategic decision making authority affecting the business as a whole, except perhaps in relation to financial accounting policies or procedures. Actual decision making authority was limited to the functional or departmental arena. On the other hand, nature of contribution or input to the strategic decision making process, where the indeterminacy of tasks was most apparent, did not necessarily correspond to hierarchical level cross-nationally (Chapter 6.2 and Chapter Eight to follow), although it is probably an accurate generalisation that, in both countries, the higher the position, the closer the involvement with and the greater the net contribution to top level policy and decision making. Closest involvement manifested as inclusion in the decision making forum.

However, this articulated by many (including senior) British accounting managers as 'now being more part of the management team' was not synonymous with more authority within this team. It was synonymous with a greater contribution in the form of written and verbal, analytical, diagnostic and evaluatory reports on business performance and forecasts, on strategic options and on the range of tactical manoeuvres available in respect of 'what if' possibilities (especially in connection with increased utilisation of micro computers, see Chapter Eight). These tasks and an advisory or consultative role were also apparent responsibilities of senior West German finance personnel at comparative hierarchical positions - one or two below the finance director - yet there was evidence that these types of activities were also delegated down to lower levels (documented in Chapter Eight). Ultimately though, exercise of power inherent in industrial finance functions in both countries was concentrated at the apex of organisational hierarchies.

Whether this conclusion represents support for a critical political economy approach to the division of labour within industrial capitalism depends on whether this framework takes adequate account of the dialectic between structural form and operational process. Here there appeared to be few cross-national contextual similarities underlying the manners in which actors operated within and made sense of the formal workplace arena, how they entered finance work; accumulated knowledge and skills; the criteria upon which competence and worth were established; thus,

the distribution of responsibilities and the nature of work roles throughout organisational hierarchies; the enabling mechanisms through which actors assumed those roles and responsibilities; and, finally, the nature of control over the productive process.

Even a structural analysis has to take account of the differing industrial relations and hence decision making structure within West German vis a vis British industry. All the West German subsidiaries observed the statutory two-tier top level board structure. But, since the labour process debate is primarily concerned with processes, then account also has to be taken of the differing cross-national relationships between finance and production in the governance of the productive process. Given that all nine cross-nationally matched pairs of companies were British owned, and given the recurring differences in industrial processes between the two countries, it becomes difficult to maintain that the concept of 'culture' is invalid or purely allegorical. Rather, it is of substantive importance, highly visible, accessible and documentable.

6.4 SUMMARY

This chapter examined more closely the linkages between national value systems, institutional organisation and the processes of establishing competence, worth and control in the workplace: all of which were reflected in the contextual arena of industrial accountancy. It was argued that not only was there more fluidity within the West German education system in cognitive terms of the temporal relationship between education and work but also that the value of formal products of education were viewed with greater perceptual flexibility. By contrast, in large British firms the processes of establishing employee competence and worth were almost exclusively underpinned by the attainment of highly theoretical formal educational and professional certification.

The nature of British jurisprudence has, in part, encouraged the historical development of a specialist accountancy function within industry where financial and management accounting have developed side by side for most of this century. This development has been assisted by independent bodies which have successfully maintained closure mechanisms. Successful, because, despite internal segmentation, the occupational umbrella of 'accountancy' is recognised within society and industry where a close conceptual connectedness continues between financial and management accounting and where certification from one of the major bodies is taken as the essential guarantee of technical, and even esoteric, knowledge in either area of activity.

In West Germany greater emphasis lay in vocational education, practical work experience and an ability to 'do the job'. These divergent philosophies extended major implications to the division of labour within industrial finance functions. In Britain, failure to secure elitist educational certification barred access to higher organisational positions with attendant responsibilities and economic rewards and, thus, severely limited upward-mobility potential. By contrast, the greater West German emphasis on practical ability laced the division of labour in three principal ways. Firstly, the high social value placed on basic vocational education influenced a large percentage of the senior managerial respondents to begin their working careers at a humble level under the auspices of this traineeship and subsequently to undertake academic study against this experiential perspective. Thus perpetuating the value ascribed to this traineeship and, since personal supervision is a formal requirement, this system may also have influenced the German managers' tendency to 'keep in touch' with subordinates' progress.

Secondly, the lowest level non-supervisory finance employees in West German firms and British clerks were not comparable structural positions because the former (a) did not consistently possess lower educational achievements compared to their superordinates; (b) executed work tasks and delivered responsibilities of a qualitatively higher standard in areas such as liaison, analysis, planning and decision making compared to their British counterparts.

Thirdly, although there was a greater concentration of university degree holders at higher organisational levels, it was clear that upward mobility was neither guaranteed nor precluded on the basis of such attainment. In the Federal Republic, practical working skills and competent performance surpassed theoretical paper qualifications as the principal managerial prerequisite. Relatedly, it was also recognised that the effective accumulation of useful practical knowledge and skills not only takes time but is also contingent upon the breadth of direct exposure to firms' constituent functions. This is achieved initially by statutorily regulated vocational traineeships. However, the argument that there can be no culture-free context of organisation was strongly supported by the consistent German practice of regularly transferring managerial actors between broadly commercial functions, including business economics. On the other hand, significantly longer tenures were apparent within Rechnungswesen (financial accounting) departments influenced by the unavoidably shallow learning curve consequent upon the complexity of tax and accounting regulation and the importance accredited to this legalistic function within industrial enterprise. The underlying social values and philosophy influencing the processes of jurisprudence were examined in Chapter Four.

Contrastingly, the differing British ethos which continues to influence the academic tradition of the education system, the theoretical bias of accountancy qualification and the managerial status or potential almost automatically conferred on holders was

onwardly reflected in the standard British industrial practice of narrowly confining work experience within the field of financial and management accounting. The accumulation of practical knowledge and skills on a wider commercial basis was generally deemed unnecessary. At present, then, the club rules which characterise the specialist function of British industrial accountancy perpetuate a wide gulf between it and other commercial functions whilst sustaining the historically close relationship between financial and management accounting activities - visible in the interlocking yet inconsistent managerial role boundaries where these two types of activities were departmentally separate.

Similar departmental separations in West German firms were accompanied by a clear perceptual distinction in the purposes of these two accounting activities and by the nature of corresponding managerial roles. Apart from supplying actuals data to controlling departments, the roles of German financial accounting managers were heavily accented towards the firms' statutory accounting obligations. The roles of controllers were more closely tied to wider commercial and planning activities: regular inter-departmental liaison also appeared more frequent than in Britain and 'treasury' in West Germany was viewed as a strategic commercial function supporting the business as a whole, thus the prerogative of senior controllers. Whereas in Britain, this function was more extensive and relevant responsibilities ascribed to senior financial accounting incumbents. Conjecturally, since treasury has assumed a corporate niche, it has been developed or

annexed by those traditionally in the highest status positions, that is, chartered accountants who predominated in financial accounting functions.

These differential processes underlying the organisation of accounting activities also extended implications to the conduct of control within industrial enterprise. It was contended that the primary mechanism of control within British industry was finance and that one of the primary functions of this extremely specialised department was to deliver accounting products in the language of capital for consumption mainly by institutional investors intent on maximising profit expressed as financial returns on investment: consequently emphasis is directed towards short-term monetary gain through share trading activity. In the absence of extensive strategic support of company liquidity from the banking system, one ultimate effect of the share market volatility upon which company fortunes depend is the utilisation of, still largely mystified, accounting products as instruments of investment control which filter through as veto and restraint over the productive process.

It was argued that, in the Federal Republic the production dimension was tantamount to the primary emphasis of control. Financial control mechanisms were a fairly recent Anglo-Saxon import into the Federal Republic but, by contrast to Britain, accounting products were not subject to mystification and these instruments were utilised in the first instance within the

productive process by those responsible for the activity of manufacturing. This was a reflection of the high value and status ascribed to actors within the productive process, the widely disseminated business economics education within the State system and influenced by the operational nature of capital markets. In West Germany the temperamental nature of share price fluctuations plays a relatively minor role in the evaluation of industrial enterprises partly because institutional banking was originally established to support manufacturing industry and continues to act effectively in partnership with firms, sharing a similar long term view of and interest in strategic investment and development. Thus, and apparent in the West German subsidiaries, relegating the utility of accounting products as indicators of overall profit and serving to undermine the pressures created by these indicators in the British system.

These cross-nationally different institutional phenomena and processes had clear implications for the way in which actors made sense of the division of labour and operationalised control in the workplace. This, it was contended, challenged assumptions underlying Marxian analyses of the labour process and supported the prominence of a cultural perspective as a means of understanding work organisation.

There was, finally, clear evidence of the closer involvement of the West German finance personnel in the processes of technical change. The discussion now turns to these processes.

Notes to Chapter Six

1. Data do not include Organisation IX which was a head office and operating site in both Britain and Holland.
2. In Organisation VIII in both countries finance departments were called commercial departments. Whilst in West Germany respondents in finance functions were generally 'commercial' employees, the term 'manager' was not generally used. In Britain this was the only company to have replaced 'financial' with 'commercial': this had been part of a purposeful policy to integrate finance within a wider commercial area and managers within this department delivered wider responsibilities based on broader experience and training.
3. In Britain all of the managers who had worked in financial accounting departments had also worked in management accounting departments. This was not the same in West Germany, seven of the eight managers had had experience of working in both financial accounting and business economics departments but this derived partly from having worked under the commercial apprenticeship system. Without the influence of this form of training, only six of the total of eleven managers would have had experience of working in both financial functions. This again is a reflection of the differing cross-national perceptions attached to the purpose of these functions. In Britain there remains a close association between financial and management accounting, trainee accountants and those recruited into firms as qualified accountants can routinely expect to work in both functions during career progression. In the Federal Republic it is not considered important or necessary to have experience of working in both departments other than that acquired through the commercial apprenticeship (theoretical knowledge of both functions is embraced by a business economics degree). This is because these two functions in Germany are perceived as having distinct and different purposes which require different types of personal orientation and mentality.
4. In Britain 'management services' departments were usually related to computing services but sometimes more closely associated with systems analysis and operations research. In West Germany no evidence was found of the existence of a department, the title of which could be translated as 'management services'. Conjecturally, this may be because 'management' does not constitute a particular identifiable professional group in the same way as it does in Britain.
5. The five West German respondents who had not worked in factories were all managers of financial accounting sections/departments. The two respondents who had had direct field selling experience were both the senior managers of 'controllers' departments.

CHAPTER SEVEN

CROSS-NATIONAL COMPARISON OF THE UNDERLYING PROCESSES AND MAJOR DEVELOPMENTAL STAGES OF TECHNICAL CHANGE WITHIN INDUSTRIAL FINANCE FUNCTIONS

- 7.1 INTRODUCTION
- 7.2 THE EMPIRICAL CONTEXT
- 7.3 THE REASONS FOR TECHNICAL CHANGE
- 7.4 SYSTEMS DESIGN AND IMPLEMENTATION
- 7.5 MAJOR DEVELOPMENTAL STAGES OF TECHNOLOGICAL CHANGE
 - 7.5.1 Centralised Batch Processing
 - 7.5.2 Micro Computing
 - 7.5.3 Information Technology
- 7.6 SUMMARY

7.1 INTRODUCTION

The previous chapter examined the linkages between national value systems, institutional configurations and indicated ways in which culturally specific factors influenced the organisation of work within industrial finance departments and between finance and other constituent functions. Chapter Six also briefly mentioned aspects of technical change, this chapter now moves to investigate the processes underlying innovation within industrial finance functions in both countries.

Section 7.2 draws attention to the empirical context because British ownership of the West German subsidiaries was found to exert influences on the nature of technical change in West Germany. By placing these influences into an economic perspective, Section 7.3 discusses the reasons for technical change in the context of comparing two similarly capitalist, democratic and industrialised nations.

The examination, in Section 7.4, of the systems design and implementation processes within the movement towards computerisation reveals important cross-national differences particularly in respects of the formation of computer departments and the role boundaries of potential users of systems. These differences notwithstanding, the major influence on the character of technical change common to both countries appeared to be pre-existing forms of work organisation. Previous Chapters Four, Five and Six

examined institutional and organisational forms and processes pertinent to industrial finance functions across the two countries and argued that making sense of the cross-national differences depends on recognising the influence of culturally specific attitudes, values and philosophies embedded in an historical context. These core cultural factors were found to be the single most important influence on forms of work organisation and, thus, on the nature of technical change.

Finally, Section 7.5 describes the major developmental stages of technological change as a prelude to the final chapter of Part Two which explores new technology and the work organisation of industrial finance personnel cross-nationally.

7.2 THE EMPIRICAL CONTEXT

Corporate involvement, and thus influence, in the processes of technical change within constituent operating companies was exercised in six main ways;

- (a) providing centralised computer processing facilities;
- (b) providing the actual design, development and implementation functions which were usually costed to the receiving company;
- (c) providing an in-house advisory or consultative service which again was usually costed to the beneficiary;
- (d) providing a forum for liaison between managers and computer experts in different companies and countries;
- (e) ensuring high degree of mobility between companies of experienced personnel;
- (f) organising secondments of personnel to assist with implementation of specific systems.

There was no consistency in corporate policy towards nor a consistent combination of corporate influences on technical change across the sample companies but, as indicated in Table 7.1 overleaf, the British companies generally enjoyed a high degree of autonomy in the initiation, selection and implementation of computer systems. Company policies towards the West German subsidiaries also differed especially the feature of autonomy in the innovation process which was not extended to Organisations IV and V in West Germany and IX in Holland - Table 7.2 below. As might be expected and shown on Table 7.3 following, this gave rise

to considerable variability in the nature of the computing resource and the sophistication of systems being utilised throughout the sample.

BRITISH CORPORATE-COMPANY RELATIONSHIP IN THE PROCESS OF TECHNICAL CHANGE

<u>CORPN</u>	<u>BROAD POLICY TOWARDS COMPANY</u>	<u>PRACTICAL INSTRUMENTS</u>
I	Uniform financial data requirements; well defined commitment to IBM, on-line and network systems,	Systems design, analysis, implementation support with company's own in-house resource,
II	Uniform financial data requirements; no apparent policy,	Previously provided transaction processing facility until company re-organised own in-house resource; systems disorganised,
III	Uniform financial data requirements; Recent policy to modernise all computer facilities,	Just started investigation and liaison with company's managers and computer experts,
IV	Standardising all financial data; firm commitment to technical change	Limited liaison, developments led by strong divisional head office resource,
V	N/A - single company	Centralised processing and all major finance admin systems computerised by central resource,
VI	Uniform financial data requirements; stop-go policy, no firm direction,	Some liaison, consultation (possibly secondments); large company central and operating site resources; systems disorganised,
VII	Uniform financial data requirements; no apparent policy,	No apparent corporate support, Company head office in-house design, analysis and implementation of new Royalties Accounting system, very little information available in department,
VIII	Uniform financial data requirements; firm commitment to technical change,	Liaison and personnel secondments to company, Company very progressive and developing systems autonomously,
IX	Uniform financial data requirements; no apparent policy,	No apparent corporate support, Company head office responsible for all development, using old batch systems and a computer bureau for some transaction processing,

Table 7.1

CROSS-NATIONAL COMPANY RELATIONSHIP IN THE PROCESS OF TECHNICAL CHANGE

<u>ORGN</u>	<u>BROAD POLICY TOWARDS WG SUBSIDIARY</u>	<u>PRACTICAL INSTRUMENTS</u>
I	Uniform financial data requirements; apparent directive to install IBM mainframe and personal computers otherwise no substantive influence on systems design/development,	Particular software for automatic conversion of aggregate data to British data format; occasional personnel secondments, close liaison on systems software,
II	Uniform financial data requirements; Intention to implement suite of business programs designed/developed in-house but devt well behind schedule,	No apparent liaison to date; WG company installed highly automated, integrated accounting package developed by German Paintmakers Assoc using Keinzle hardware,
III	Uniform financial data requirements; Increasing corporate influence in management of subsid including systems (subsequently subsidiary sold),	Manual conversion to British data format; to date all systems design/development/ implementation autonomous with 5% share in software company,
IV	Uniform financial data requirements; policy of Pan-European common accounting systems,	Very sophisticated, integrated process technology systems, all designed, developed and implemented by the British Division,
V	Uniform financial data requirements,	All systems designed/developed by the British company, imported as a series of packages with some tailoring for local needs,
VI	Uniform financial data requirements; apparent directive to install IBM mainframe for ongoing conversion otherwise no substantive influence on systems design/development,	Particular software for automatic conversion of aggregate data to British data format; occasional personnel secondments, some liaison on systems software,
VII	Uniform financial data requirements; No apparent policy/influence,	Manual conversion to British data format; to date all systems design/development/ implementation autonomous,
VIII	Uniform financial data requirements but reporting to Dutch corporate head quarters,	All systems design/development/implementation autonomous; high level of liaison between countries on computerisation,
IX	Uniform financial data requirements,	All systems designed/developed by the British company, imported as a series of packages with some tailoring for local needs,

Table 7.2

MAIN FEATURES OF THE COMPUTING RESOURCE OF EACH SAMPLE COMPANY

<u>ORGN</u>	<u>BRITAIN</u>	<u>WEST GERMANY</u>
I	(High level of corporate support,) Large computer development resource from 1960s and processing facilities, Protracted development, integrated HQ accounting systems and 'communications' policy, Computer support and operations at operating level,	(Low level of UK corporate support, liaison and personnel secondment,) Computer development dept from 1960s, highly centralised accounting systems, only computer operations at operating level,
II	New Group Information Services department formed 1981 and re-located from London to operating site, Policy to develop suite of 16 integrated business systems but after 4 years only 1 (from external software house) of 4 operating effectively,	Autonomous computer development, no in-house computer resource at all, All systems analysis etc done by HQ-QS Finance Director, bought integrated accounting system from WG Paintmakers Association plus Kienzle hardware,
III	(Recent corporate policy to modernise systems,) Computer resource from 1960s, some HQ integrated finance systems, Computer development dept at QS,	Recent corporate influence but autonomous computer development, in-house HQ-QS resource from 1970s plus 5% share in software house; systems under devt, Mostly batch systems,
IV	Computer resource from 1960s but special HQ finance systems devt dept in 1979, rapid devt/implementn of HQ-QS integrated finance systems, Magt Services at operating level,	All integrated QS process technology plus finance systems developed by UK designers, QS Computer Services dept,
V	Computer resource from 1960s, protracted systems devt, emphasis on batch financial accounting systems,	All systems development by UK designers with tailoring for local reqts by HQ-QS finance dept,
VI	Computer resource in HQ and QS from 1960s, HQ devt delayed by 1970s re-orgn, finance systems integrated, Also at QS,	Autonomous HQ computer resource from 1960s, centralised finance systems not integrated, QS Computer Operations ,
VII	HQ computer resource from 1960s, New Royalties accounting system under devt, QS Computer Operations dept,	Autonomous, HQ-QS computer resource from 1960s, Integrated Royalties system with legal/contracts and copyright,
VIII	HQ computer resource since 1970s, gradual devt of advanced, integrated plant-wide systems, direct links to company and corporate HQ, HQ,	Autonomous HQ computer resource from 1970s, Mix of batch and on-line systems, centralised in HQ, No QS computer department,
IX	HQ-QS computer resource from 1970s, Using Comshare bureau for some batch transaction processing, Micros for management accounting,	All systems imported from British company, Tailoring for local requirements by finance department,

Table 7.3

Table 7.1 above indicates the degree of variability in type and extent of corporate influence on computerisation within the British sample companies. Table 7.2 indicates that British influence on computerisation within the West German subsidiaries was limited largely to certain dedicated software for converting aggregated statutory financial accounting data to the British format together with hardware policy statements in Organisations I and VI: and in Organisations IV, V and IX where all systems were imported from the British company. Thus, six of the nine West German firms provided opportunities to investigate the processes of technical change undertaken largely independently of cross-national influences: and the remaining three companies represented case studies in work organisation where design criteria, hardware and software were very similar across the two countries.

One effect of importing British systems for Organisations IV, V and IX was that capital expenditure on computerisation as budgetted in annual operating plans was more or less determined from the British side. No significant differences to this standard, annual budgetary procedure were apparent in any of the sample companies across both countries. Departmental heads allotted a percentage of their budgets to developmental and capital expenditure on computerisation where any particular spend was subject to a priority rating, pay-back calculations and overall budget approval at a higher level. Typically:

"On average DP departments have got a three year backlog of applications. Now if you've got this backlog, you're meant to

do the ones which have the fastest pay-back first and our particular department hasn't. Now that's because we only add up the numbers twice a year: in this area [UK Accounting Services] where they're adding up the numbers monthly and forecast other information quarterly and other things, there's a much faster pay-back, therefore this area has been identified as a priority....We think we will actually make cost savings eventually but we don't know that at the moment, we can't demonstrate it....

Not every decision has to be referred upwards, there are different levels and if some sort of capital spend is within budget, when the budget has been approved then that particular installation will have been approved in the budget. The levels of authority are at a lower level if it's within budget and if it's something someone thinks of after the budget has been set in concrete, to get capital spend or even more difficult, to get additional spend against profit, it has to be referred up to a higher level."

(Respondent 1, UK Organisation V)

As far as could be ascertained, budget approval did not normally involve corporate actors on the British side whereas overall budget approval was required from the British company for all West German firms except Organisations I, VI and VIII. However, as later findings imply, this did not appear to influence the innovation process. Clearly of greater influence were the sums of spending involved. Variations here occurred for three principal reasons. Firstly, the overall size of the corporate entity. Normally, the larger the corporate entity, the larger were the budget allowances down through the managerial hierarchy. Relatedly, budget allowances varied according to the seniority of the managerial position. Within the usual hierarchical arrangements of any one company, generally the higher the position, the larger the budget allocation responsibility of the incumbent.

Although, thirdly, budgets varied according to the size and functions of any particular manager's department.

The importance of these differing situations is two-fold. Considerable differences in spending levels on new technology across the companies reflected in substantial variation in the sophistication of the computer systems being utilised (Table 7.3) and, thus, the processes of change in work organisation were at different stages. Secondly, differential spending levels over periods of time corresponded to different time spans over which changes in work organisation had taken place. In only one case study (the British Divisional Head Office of Organisation IV) had the spending been substantial enough to effect major changes on a large department over a relatively short time. Thus, computing and accounting personnel directly involved in or affected by this development were available to supply data which enabled a clear comparison of work organisation before and after the event.

7.3 THE REASONS FOR TECHNOLOGICAL CHANGE

In the companies cross-nationally there was a firm consensus that the implementation of new technology was primarily spurred by market competition characterising laissez faire capitalism. Little doubt it seemed, as Jamieson (1982-83) suggested, that pressures arising in capitalist economies influence the social system to move in a certain direction - in this case towards increasing computerisation of information systems (Exhibit 7a below). Pressures to computerise arose not solely from straightforward price competition in the market place but also from changing market place structures. Thus, management objectives could be construed as company growth and market power in addition to the key concern, the cost effectiveness of operations, which may be under-pinned by a profit-maximisation motive (Baran and Sweezy 1966).

Exhibit 7a

New technology - forging the competitive edge

"I could have a personal computer, for example, Reuters, gives information about the dollar exchange rate, prices, interest etc.. it is only useful if I get the answer and then say now what will change, for example, if the dollar rate changes or the price structure would be a different one."

(Respondent 2, WG Organisation I)

"I reckon anybody who puts in computer systems to save people is kidding themselves....one of the changes introduced, invoice came in, it hit the computer system, now that meant you stripped the VAT off some weeks earlier, and of course you claimed back that VAT on purchases."

(Respondent 1, UK Organisation II)

"Everyday I'm telling my people that they have to realise that the only man who really counts is the customer....with the new system we will have better information on trading debts, when they are

due, the same applies to creditors, liabilities, working capital changes, then we could do better forecasts."

(Respondent 1, WG Organisation III)

if...."Corporation IV is sufficiently slick to get the product to him [customer] by the time he needs it, then we get the business....So I wouldn't say it was general to introduce computer systems in order to reduce staff, it's the competitive edge that drives in the main."

(Respondent 1, UK Organisation IV)

"Yes, the implementation of telecommunications and computers is going to be brought into this office communication, if you don't update your knowledge, you're going to be way, way behind."

(Respondent 2, WG Organisation V)

"The increasing ease of computerisation, information into a system allows you a better handle on that oil and monitor more precisely what's happening, real-time because you're moving everything day and night....the other important thing about transaction accounting is that more and more you capture the transaction at source and then you've trapped it forever and it doesn't have to be touched by a human hand."

(Respondent 5, UK Organisation VI)

"We're all very unhappy here that we're not on-line, we'll become much more efficient and we would then be in the position to deliver directly much more management information to the financial controller, to the MD etc, we prepare management information but we would like to prepare a lot more because we know the royalties are the main block of expenses."

(Respondent 1, WG Organisation VII)

"The competition is becoming harder and harder. The pressure to use new technology to get more cost efficiency is enormous and if you don't use this technological opportunity, I'm pretty sure you'll vanish from the market. Our market is very hard competitionit's an enormous process of concentration, it means the bigger one trading company is, the more powerful it is and it gets now, by computer technology, more and more transparence in the profit-abilities, the possibility to get more profitable and succeed in this competitive fight....when you're not able to produce products at the lowest cost possible, you'll be out of the race."

(Respondent 4, WG Organisation VIII)

"Transaction accounting at the levels we do it now would be out of the question without computer assistance, big mainframe systems have been doing the housekeeping for some time, aside from that has obviously been in the areas of financial modelling enabling us to produce our plans and do massive number crunching exercises quickly and churn out reports....I see that we've got to move towards a network."

(Respondent 2, UK Organisation IX)

Computerised systems were commonly held to increase operational cost effectiveness because of enhanced reliability, speed and flexibility of information processing and the integrative function of communications. These parameters, however, applied in different ways to financial and management accounting.

Within financial accounting, enhanced reliability derived from the error-free processing of computerised facilities, compounding the speed with which these facilities process transactions compared to manual activities. With cash flow analyses/management having assumed notable gravity in recent years, more reliable and faster processing reduced the lead time between firms' outgoing expenditure (such as VAT cited above) including the costs of production and incoming revenue - reclaiming VAT and timely receipt of accounts receivable etc.

"In the UK market there's the equivalent of 48 days of sales outstanding, overseas it's about 80, in Europe 60, cut back by one day and it's worth £12 million."

(Respondent 1, UK Organisation IV)

British concern with market visibility also influenced a positive perception of computerised consolidation of accounts insofar as faster processing shortened the time lag between the collection of aggregate figures and the market place presentation of statutory published accounts, *"we collect the data about the twentieth and turn it around in five days and send it to the Stock Exchange"* (Respondent op cit). Clearly, any pressure directed towards

prompt annual publication of corporate performance extended to the West German subsidiaries, although not to indigenous German firms because of differential shareholding structure and because published accounts function more as an official verification that firms' transactions have been conducted according to legal prescriptions than a record of profit-related performance.

Whilst reliability and speed also featured as reasons given for increased computerisation of management accounting functions, these were not underpinned primarily by an expenditure-revenue dimension but operational control and managerial decision making for which the other aspects of flexibility and data integration assumed greater importance. Against a general realisation in both countries that firms need to react quickly to operating performance variations, automated data transmission, integral to, say, complex process technologies or electronically assisted distribution and warehousing, has lent a utility to this information where none existed before because it could not be processed quickly enough to be of ongoing value to management. A major competitive advantage of computer technology was seen in the way it is moving operational monitoring towards a real-time exercise. At higher levels, the additional analytical flexibility contingent upon micro computing, packaged software, financial modelling developments etc, are enabling the manipulation of increasingly detailed financial analysis matrices which were claimed to increase the transparency and internal comparability of business performance, improve the reliability of forecasting

techniques and assist the decision making process by providing rapid quantification of 'what if' possibilities.

These benefits or potential benefits were perceived as increasing operational effectiveness and reducing the costs of production by, for example, more efficient utilisation of energy and materials. Pressures in capitalist economies were, thus, seen to manifest as the necessity to reduce the costs of production (Braverman 1974, Poulantzas 1975, Littler 1982): certainly respondents in both countries alluded to this prospectus and that reductions in the administrative workforce were formally included in the pre-investment cost-benefit calculation. For example, "*he [immediate superior] always told me we can justify that personal computer only if we got rid of one or two people*" (respondent 8, WG Organisation VI) or,

"before we started designing the system, we embarked on an exercise of going around to the accountants....and we said 'look how many people do you think we'll save with this system' and the answer came back 'we can identify fourteen jobs that would go'....and the cost case in terms of whether it was a go or no-go project depended on me finding an eighteenth."

(Respondent 2, UK Organisation IV)

There were, however, contradictory responses between (and within the same) companies surrounding job displacement as a motive underlying technical change (viz Exhibit 7a above): neither was it clear whether the paramount aim centred on improving working techniques or reducing staff,

Q. "Can you tell me why you wanted a PC?"

"Because we have a number of information requirements repeatedly every quarter or twice a year and it was a help and the second reason was that we had to reduce the people."

(Respondent 8, WG Organisation VI)

Here, having to reduce people was part of a rationalisation programme. During recent years all the sample companies had undertaken rationalisation programmes or measures of varying degrees of severity, those most severe experienced in Britain. Paradoxically, as Exhibit 7b suggests, job displacement may, therefore, be principally related to the trading climate.

Exhibit 7b

Capitalist macro-economic pressures

"We were right in the middle of our re-structuring and rationalisation programme going along with considerable staff reductions.. as a consequence of the second oil crisis, things became rather difficult....as a response to the changing environment, I proposed a complete change of our strategy in the gas business, what I'd done in that one and a half years was organise my own job away."

(Respondent 1, WG Organisation I)

"In 1982/3, these were the real recession years, that was definitely a huge impact on our business...for many years we were very cautious and cost minded, we try to reduce numbers of people firstly because expected sales may be lower and secondly we try to use rationalisation effects, the computer in the accounting department and re-organisation in the factory."

(Respondent 1, WG Organisation II)

"When I joined this company information for head office was very infrequent, competition wasn't that great, it was a nice cosy world. Well that changed when inflation took off, people didn't have the money to spend and I saw a decline in the market for the first time, therefore we had to become much more competitive, it's very, very cut throat now, that's why we've developed very quickly management information at a very detailed level....there's also information that goes to them direct from here in a computer

printed format....and the workforce has been cut down considerably both on the shop floor and the staff side."

(Respondent 4, UK Organisation III)

"The economic climate was such that the Division either slashed it's fixed cost base or went out of business....but it was achieving those sort of savings, slashing quite ruthlessly, closing places down and taking advantage of computer systems and whatever technical advancesthe accounting department in that period was slashed by about 60."

(Respondent 2, UK Organisation IV)

"Herr X came to West Germany with orders to get the company under control again which obviously means first of all get control of costs....so you made a plan to reduce your company by X people, well once you've decided that then the thing becomes a technical problem and EDP can help to maintain control of costs."

(Respondent 1, WG Organisation V)

Generally, evidence suggested that decisions to rationalise, and hence shed jobs, preceeded the demand for computerised facilities and the reduction of labour was not generally a concrete condition of subsequent systems implementation (cf Child et al 1987). Moreover, displacement of employees was essentially perceived as a short term measure to combat immediate trading difficulties. The complementary strategic objectives were the refinement of control techniques over increasing operational cost effectiveness: and, as a consequence, improvement of human resource skills and abilities (cf the Council for Science and Society 1981).

Detailed discussion on this latter point is reserved for the next chapter, particularly the cross-national differences in the operationalisation of skills enhancement which suggested embeddedness in pre-existing attitudinal and institutional phenomena. Rather than the accumulation of skills, however, the potential for

transferring abilities as a reason for technical change was specifically suggested only on one occasion: respondent 8, Organisation VI in West Germany,

"....but the main reason to get everything computerised so that not only the expert can work it out but also the colleague has got the right device in the computer".

Q. "Was that then a way of taking some of the workload off the better trained and skilled people?"

"It's partly that one as well, yes, all this work connected with the proceeds, forecasts or financial results, it took 60-70 percent of my time and this was not the right way to live....all the planning business, price quotations and price formulas, we have contracts with our company in Rotterdam, they're buying 800,000 to one million tons of oil and gas every year because we can't do it with our own facilities. So we got a formula which is price related and this is on the PC and we've got on the PC all the plants every day put onto the computer so we can re-calculate this formula very quickly any time that it's wanted".

This non-finance respondent had little contact with Rechnungswesen but considerably more with Central Planning and Controlling. The perceived need to delegate down more of the complex calculations may have been due to the particular structure and workload of his department: but, since he possessed an apprenticeship qualification thus was not a graduate yet considered himself an expert, his meaning of 'expert' and interpretation of 'better trained and skilled' almost certainly referred to those more experienced rather than more educationally qualified. Moreover, he was clearly pleased to have been relieved of, at least, some of his work tasks. Given, as discussed in the previous chapter, the value place on practical work experience in Germany, arguably the

computerisation and subsequent delegation of these complex calculative tasks may not necessarily imply any weakening of the 'expert's' role where the expertise is recognised as based on practical experience. (The possibility of task-transferral is particularly salient when realised as an unintended consequence of technical change: the implications of one such event described by Respondent 3 in the British Organisation IX are discussed in Chapter Eight.)

This point is central to any potential technological threat to British accounting professionals because, as Chapter Six demonstrated, in large British industrial companies the major yardstick which determines an employee as an accounting professional, and which is synonymous with 'expert', is the paper qualification conferred by one of the bone fide accountancy institutes. However, Chapter Six also put forward a strong argument that this yardstick actually measures 'theoretical' not practical expertise although it remains a yardstick which largely determines the division of labour within finance functions which, in turn, define the content of indeterminate work tasks. Whilst practical expertise may constitute the essential safeguard against any possible deskilling of 'expert' work, the question arises as to whether the same principle applies to those actors defined as experts on the basis of theoretical measurements?

In the empirical situation above, the construction of a formula then programmed into a computer was tantamount to a technical

application of essentially theoretical knowledge which then allowed other employee's without this knowledge to conduct the expert's former tasks. The position of the expert in this case was not weakened because the existing indeterminacy of his work tasks had been established on the basis of practical experience. Contrastingly, where this basis relies on theoretical measurements, the content of which is programmable in computer software, the only protection against professional deskilling then actually lies in the same source of political power which already determines the division of labour within British industrial finance functions. Given that this political power also confers status and comparatively high economic rewards but that, as highlighted above, firms are under constant pressure to reduce operating costs, the question then arises as to how long this political power can be sustained in the light of continuous cost-benefit analyses?

Although the example above was not a finance department, the principle of transferring work tasks is certainly applicable to finance functions especially as this was finance-related work. However, the extent of transferable potentiality will depend partly on pre-existing working arrangements. Research findings in the previous chapter suggested that West German non-supervisory employees in industrial finance functions routinely undertook higher level responsibilities, with implications for the indeterminate work content, than their British counterparts. This would suggest that there is greater work task transference potential

within British industry because the delineation of clerical work begins at lower skills and ability levels. Whether work tasks are transferred to lower organisational levels and how work arrangements transpire in situations of technical change will also depend on the underlying concepts and conduct of the computer systems design and implementation processes. We now turn to a brief examination of these processes.

7.4 SYSTEMS DESIGN AND IMPLEMENTATION

Klein (1976) noted the importance of the values underlying the design criteria on which computer systems are based: Hedberg and Mumford (1975) found these to correspond to McGregor's Theory X man because, they concluded, systems designers were directly accountable to top management for the systems they designed. As was indicated at the beginning of this chapter, the influence of top corporate management on technical change within constituent companies was exercised at arms length through budgetary procedures and only Corporation I in Britain appeared have constructed broad corporate-wide policy guidelines towards aspects of computerisation.

It was more difficult to assess the nature of accountability of systems designers to top management within the British sample companies. Although here again the standard budgetary procedures operated where individual user-manager budget holders retained a primary decision making role and sometimes liaised directly with computer personnel in steering committees or project teams. Systems designers' accountability however, maybe somewhat illusory or the nature of this accountability elusive because findings within the British companies suggested a wide, though considerably narrowed, gulf in knowledge and understanding between computer personnel and systems beneficiaries and users [1]. Historically,

"Group Information Services had a diabolical reputation through the '70s....it [technical change] then becomes far

more of a lottery, how it happens or what happens, much more power going to the Informations Services bunch, if you've got a strong IS bunch. I remember from my professional experience, going around a lot of DP departments, the guy at the top was actually just a bullshitter and it's precisely in that role of interpreting, of trying to be the bridge between the technical and the more lay, that the difficulty arises.... So many people don't know how to manage these technology specialists, how do you know if they're telling the truth, a lot of people have a fear about this."

(Respondent 1, Organisation II)

With the exception of Organisations IV, V and IX which imported systems from the British companies, important aspects of the innovation process in the West German companies were different. This gave rise to an accountability nexus based on deeper knowledge and closer understanding between interacting parties in the systems design and implementation processes. Yet, cross-nationally, the final output of these processes conduced incremental rather than monumental changes in work organisation. Both systems designers and users/beneficiaries, who initiated the design process, appeared to conceptualise computerised systems from the basis of pre-existing structural work arrangements and thus, perhaps unconsciously, incorporated the inherent work organisation principles. If these principles correspond to McGregor's Theory X, this then becomes less related to the elusive nature of systems designers' accountability than to an inability or political disinclination of organisational actors to conceive of and operationalise innovative forms of work organisation (cf Child et al 1987).

STAGES OF SYSTEMS DESIGN AND IMPLEMENTATION

	<u>BRITAIN</u>		<u>WEST GERMANY</u>	
<u>Involvement of</u>	<u>Users/Computer Personnel</u>		<u>Users/Computer Personnel</u>	
<u>Stages</u>				
Initial Idea	Y	N	Y	N
Initial Research	*	*	Y	N [a]
Initial Systems Analysis	*	*	Y	N
Appoint UD-CD Coordinator	*	*	Y	N
Initial Costing	*	*	Y	Y
Initial Design Specification	*	*	Y	N
Definition of Requirements	Y	N	Y	N
Form UD-CD Project Team	*	*	Y	Y
Formal Project Proposal + TR	Y	S	Y	S
Feasibility Study (T, O + E)	S	Y	Y	Y
Decision	Y	Y	Y	Y
Appoint UD-CD Coordinator	S	S	*	*
Form UD-CD Project Team	U	U	*	*
Form UD-CD Steering Committee	*	*	Y	Y
Detailed Investigation	Y	Y	Y	Y
Detailed Specification	N	Y	Y	S
Review Specification	Y	Y	Y	S
Form UD-CD Steering Committee	U	U	*	*
Detailed Design	N	Y	S	Y
Programming	N	Y	N	Y
Program Testing	N	Y	N	Y
Systems Testing	I	Y	U	Y
Implementation	I	Y	Y	Y
Systems Review	Y	Y	Y	Y

Table 7.4

* = stage did not exist at this juncture:

Y = Yes (in all firms and on all sites where computerisation had taken place involving an indigenous development resource):

U = Usually:

S = Sometimes:

I = Infrequently:

UD = User Department: CD = Computer Department:

TR = Terms of Reference:

T, O + E = Technical, Operational and Economic Aspects.

[a] Organisation VIII was unique in the sample insofar as potential commercial managers were frequently recruited initially into the firm's computer department. Although formally reporting to the computer department manager, in practice they worked within and reported to the head of the department for which systems were being researched, analysed and designed.

Table 7.4 above details the constituent stages of systems design and implementation within innovation processes cross-nationally. Questions concerning this innovation process were put to all finance and computing personnel, who, with exception of a few clerical/supervisory employees were all able to supply relevant information. In only one firm (West German Organisation III) was it not possible to cross reference and check the data within the firm. The table is constructed on the basis of all data collected.

The table indicates four important features of the innovation process:

- (a) in both countries there was a high degree of consistency in the data concerning the stages of firms' innovation processes;
- (b) cross-nationally the sequence of stages was different;
- (c) compared to Britain, **user departments** in the West German firms conducted more initial analytical and design work before the same 'feasibility study' stage in each country was reached;
- (d) compared to Britain, throughout the innovation process the intellectual contribution of user departments in the West German firms was greater.

Here it is important to note that consistent trends within the innovation process in each country were not associated with relative company size. Since a higher degree of work task specialisation within and between departments is normally exhibited in larger firms, it might be expected that the largest

West German Organisations (I, VI and VIII), which were also larger than the British Organisations II and IX and possibly VII - see Table 5.1 - and which each supported in-house computer departments, would have concentrated the work effort related systems design and development within their computer departments. This was not the case in these Organisations, nor in the West German subsidiaries II and III which were larger than the British company IX.

Neither was the higher degree of West German user involvement related to the time span over which in-house computer departments had been established: that is, the longer these departments had been in existence, the greater would be the expected accumulation of expertise and, thus, the more likely that computing personnel would assume comprehensive responsibilities for computerisation. Table 7.3 in the previous section noted that four of the West German firms had established in-house computer departments by the 1960s, it could be reasonably expected that this time span would be long enough to establish a computing resource capable of undertaking the whole systems development programme if this was the intended scenario. Clearly, this was the case.

Exhibit 7c below demonstrates that responsibilities for systems analysis and design were either ultimately or directly delivered by a departmental head and a co-ordinator. These role elements were perceived by the West German managers as a mechanism which necessitated continuing close involvement with the work of

subordinates and assisted the development of practical (analysis and design) skills by doing. Thus, it appears that the concept of *Technik* (Glover and Martin 1986, see Chapter Five, Note 4) may indeed be applicable in West German firms to both productive and administrative functions. Appendices 4 and 5 are, respectively, a data flowchart of financial accounting systems produced by respondent 1 of Organisation I (the second largest German company) and a documented analysis of present and future finance systems produced by respondent 1 of Organisation II (the second smallest German company). These substantive conceptual and analytical contributions in the early stages of the innovation process were deemed influential on the efficiency and effectiveness of subsequently implemented computer systems.

Exhibit 7c

West German user involvement in the innovation process

"The point is that right from the beginning we transferred one chap from the EDP side to this department and there's one chap occupied particularly always developing, improving the systems and the support for the systems for the controlling work. He's a member of my department and he reports to me."

(Respondent 2, Manager Treasury/Control, Organisation I)

"Traditionally we did a lot of work for EDP [Electronic Data Processing], the planning of EDP requirements, that is, make the conceptions, the systems analysis and make the requirements was always our, and not the task of the Organisation Department, only the programming was done there. We had to go very deeply into the systems....Respondent 6 is a very experienced accountant and Co-ordinator now, he produces the work for the programmers."

(Respondent 3, Manager, Financial Accounting, Organisation I)

"The job of Co-ordinator is fifteen years old....I had three years training on the job and I learnt everything about computers I

should know within the accounts departments....what you should learn you either learn it here on the job or you don't learn it.

(Res 6, Co-ordinator, Financial Accounting Department, Orgn I)

"We don't employ outside people, we set up the system ourselves, it's much more efficient because it takes a lot of time to explain to other people exactly what you want and we know what we need.... The package is exactly what the UK have been trying for many years to develop but they didn't manage it yet. Also they made a mistake of rushing into it and we did it step by step."

(Respondent 1, Finance Director, Organisation II)

"We're working with EDP since 1965....he [designate leader of Organisation Department] is with the company since he began work, more than 23 years. He's an Industrie Kaufmann and then he came into the EDP section and learnt programming. So he did everything....the main project now is accounting software....the more people know what's going on the better....I'm convinced the better the systems analysis is, the better and less time consuming is the programming."

(Respondent 1, Finance Director, Organisation III)

"Management said we want to have a system whereby each profit centre will have its own information and steering systems but at the end of the period put the things together for the corporate result....I have to create the structure of the information and controlling systems, find out what needs are there on the user side, write down a systems analysis and talk to the computer people and tell them to develop this computer system."

(Respondent 5, Assistant, Profitability Calculations, also acting Co-ordinator, Organisation VI)

"I preferred this opportunity to come to the Organisation Division in company VIII and was a junior organizer, several projects making instructions, organising with the distribution but I had nothing to do with exactly programming and there was quite a big project, and I became project manager....After three and a half years I came to the management accounting and there was one of my main projects, implementation of the PC, we had a test here for three months where I learnt, learning by doing, the PC and then a special project about PC strategy of the company, after that was installed the function of PC specialist in the organisation."

(Respondent 2, Management Accountant, Organisation VIII)

"I started in the Organisation Department and made some projects,The job was to analyse the problem, to build up a new organisation, to make proposals for the programmers, the programmers made the programs and the next step was to integrate it into the organisation. I was the responsible man for the systems for the whole time, from the beginning to the installation."

(Respondent 5, Buyer, Organisation VIII)

Table 7.4 and Exhibit 7c above indicate the depth and breadth of involvement in the innovation process of potential users of computer systems in the West Germany companies. This involvement had three major aspects. Firstly, the accumulation of knowledge related to existing systems within user departments. This knowledge was accumulated not only by working within these departments but also by the application of this knowledge in the development of systems analysis skills as a precursor to computerisation - skills developed by doing. Even in Organisations V and IX which imported systems developed in Britain, analysis for the tailoring of systems to accommodate local requirements was undertaken within user departments, it could not be undertaken anywhere else because, as the organisation charts show, neither of these companies had computer development departments.

Secondly, it was not possible for potential systems users to provide programmers with detailed programming specifications without in-depth knowledge of computer hardware, software and operating systems. Thirdly, as was also indicated in Table 6.3, these customary organisational practices were supported by a majority (7 out of 11) of the West German head office finance managers (and non-supervisory employees, viz Exhibit 7c above, respondents 2 and 5, Organisation VIII) having formally worked in computer departments.

The obverse implication of this was the mode of recruitment into computing functions. Clearly, this was hardly entirely dependent

on formally educated and designated computer specialists: rather, on those, as one respondent put it, 'who have a feel for computing'. Indeed, even in the larger Organisations (I, VI and VIII) where greater work role specialisation might be expected, this was also the principal criterion which underpinned the original establishment of the firms' computer departments. In Britain, although three respondents had knowledge of systems analysis and/or programming stemming from the early years of their careers, none of those currently working in finance functions had had any involvement in formal systems analysis within the innovation process and only two out of the total sample of 62 had worked in a computer department. Of the five computing respondents (all with specific responsibility for accounting systems), none had worked in a finance department, only one, respondent 2 in Organisation IV, was originally educated in a non-computing discipline, physics.

Since the West German companies were British subsidiaries yet consistently advanced the innovation process by strategems quite different to those of the British parents, the argument for a culture-bound rationale becomes compelling. Moreover, as these strategic differences focus essentially on the division of labour within the innovation process, the germane cultural influences are precisely those values underlying institutional forms which manifest in organisational settings as orthodox role boundaries. In Britain, then, the institutionalised form of accountancy has and continues to perpetrate the value of this work activity as a

distinct industrial specialism which influences a functional separateness within the innovation process and which is not comparable to the West German industrial function bearing a similar label.

Other, and related, cross-national differences within the innovation process were the timing of formation of and quality of communication between various liaising agencies which contributed to sharp differences in the perspectives on technical change in the British firms and greater homogeneity in the Federal Republic (Exhibit 7d below). As Table 7.4 and Exhibit 7c indicate, a Co-ordinator with formal responsibilities for ensuring effective communication between the user and computer departments was a well established, long-term position in the larger West German companies. The role responsibilities of respondent 6 in the British Organisation II included liaising with the computer department but where accounting co-ordinators were appointed this was normally on a short-term project basis. The Table also indicates that the formation of steering committees and projects teams in the German firms occurred earlier in the process than was generally the case in Britain. What the table does not show is that certain British firms, notably II and VI, either did not have formally organised liaison forums of this type or that they were a relatively recent phenomenon, established as a retrospective mechanism in an attempt to mitigate the inefficiencies of systems already implemented.

In Britain the latter stages of systems implementation appeared to have been accomplished without any, or minimal, involvement of users. Respondents 8 and 5 in the operating sites of Organisations I and VIII were exceptional in their degree of input into the implementation of a payroll interface and a general ledger package respectively. Whereas the common policy throughout the German sample required responsibility for systems implementation and the production of associated documentation, such as system user guides, to be delivered primarily by user departments.

Exhibit 7d

Cross-national perspectives on technical change - developers and
users

"We're trying to get the accountants more and more involved, to interact more with the system via the screen and to work less from paper."

"I always think of accountants as fairly sober gentlemen, they've taken a long time to get away from being the end users of computer output....into this sort of environment where they actively participate....they're still great believers in their bits of paper."

"Accountants are good at not really knowing what level of information they need....a month later he might say 'well it was good enough then but I really need it on a half-day basis' and it was hell to try and change everything."

(Respondents 1, 4 and 6, UK Organisation I)

"The end users of a system rarely understand our problems, we rarely understand theirs'. It's a matter of education, if we knew more about each others' jobs there'd be a lot less friction. What happens quite often is that we'll work, for example, six months on a sub-system to their original requirement and we find out it's not really what they wanted in the end when the thing goes in....I've always been in computing and I've never known it any different....sometimes even the managers of the department don't fully appreciate the day-to-day problems the clerical people have to go through, they don't know all the fiddles that go on within a department, they have ways around clerical procedures which quite

often aren't that clear to the management, they do tend to lose touch with the day-to-day running of the department."

(Respondent 10, UK Organisation II)

"We actually found a whole group of accountants who were really just data input and output but whose knowledge of what was actually going on was very, very weak, it was nonsense....I do this and do that, they'd gone to sleep."

(Respondent 2, UK Organisation IV)

"We came with business oriented people into computing and are still looking for business people in our area....The controller people are more or less compared with marketing, we have no problems in communicating with each other....with the accounts department it's quite different....so we're at certain [technical] levels and have problems discussing that with them. On the other hand, they know what they want, it's very solid, they want A and B automated this and this way, they've thought out the consequences quite good."

(Respondent 7, WG Organisation I)

"Generally I have the impression that accountants are very conservative towards anything, it has to be perfect, correct, no deficiencies....the service from the system is provided elsewhere so there's not a lot of interface....I feel that the relationship with management accounting is not a bad one, the communication is OK."

(Respondent 3, WG Organisation IV)

"I worked in controlling and management information, after that I was controller of an affiliate, it was two years ago I changed to computer administration. In former times we had a department with a computer and all those around must say please, please. Nowadays, they do parts of the work themselves, programming, program tools, lists and graphics."

(Respondent 7, WG Organisation VI)

"And then we have team members, programmers, organisers, analysts and the men out of the user department and they are working with us, sometimes they have to get free from their normal work and work in this project otherwise I don't think we could get the systems running....the commercial man wants to have a system but it must be the right design and to get an overview about how it's running, so systematical, analytical."

(Respondent 3, WG Organisation VIII)

"Basically systems analysts....had no bloody idea of what was happening and basically like Topsy they grew. You get some systems analysts who actually know nothing about the business for which they're structuringthe conceptual bit is never done correctly, people don't ask the question 'what is it we really want' and when that question is asked, people actually don't know because they've never thought about it....What we've got to do is

stop right now and clean down all the stuff but to do that we have 900 enhancements at least waiting to be done."

(Respondent 2, UK Organisation II)

"I spend a lot of time sorting out problems in the running of the department because we've just introduced two new systems, neither of which are running smoothly, I haven't been involved in the setting up of those systems and now I find they're causing me problems....We're not getting the information out of the system that we require....it seems to have been set up without a lot of consultation with anybody in the finance department."

"There was an absolute block, total empire building by the computer department. Now that's changing but through force on our finance part, not through any ongoing receptiveness on the part of the computer people."

(Respondents 7 and 9, UK Organisation VI)

"The technology was available 5/6 years ago but we didn't do it... when they were designing a database system, they were re-designing the same system, also there wasn't sufficient amount of user participation so I stopped that project....about 20 systems people had to be placed somewhere else or laid off but the reason for that was that the people who were in charge of designing the system were not looking at it in terms of OK if we're starting from afresh how are we going to do this....which has been done in the new specs. [2]"

(Respondent 2, UK Organisation VII)

"One of the things that rather frightens me, in general terms but also about this company, is that the way we think what we are capable of doing is dictated to a large extent by the computer systems that we have and unless I understand the shortcomings of those systems, the people who report to me, I need to understand to what their thought processes are being dictated to by the system. So that's why I've got it [terminal] there, so I can understand better the systems which we as a company are using."

(Respondent 3, UK Organisation VIII)

"I got my accountants to sit down in front of micros and learn how to use them, some of them were very, very reluctant, now I can't get the buggers off the machines and one of the reasons for that is because it makes us independent of the DP department. That is not to criticise the DP department but what happened in the past was if we'd used the mainframe we'd have to specify in detail to a systems analyst....but if we wanted to have changed it we'd have to go through the whole routine again."

(Respondent 2, UK Organisation IX)

Exhibits 7c and 7d above demonstrate an important corollary of the differing cross-national approaches to the innovation process,

that inter-functional perspectives on technical change were less homogenous in the British firms. In the Federal Republic, any mystification of relevant knowledge, which may have created barriers to understanding and communication between user and computer departments during the inchoate stages of computerisation (1950s and 1960s), had been effectively demystified with increasing computing literacy, especially amongst user departmental heads who also 'managed' the innovation process to a substantive degree. Mystified knowledge, inter-functional communication problems and differing perspectives on technical change appeared more persistent in the British firms. The source of the problematic is deeper-seated than overt relationships between two functions: rather, as also suggested in Chapters 5.3.2 and 6.3, that a fundamental weakness of the ethos which values the rigid functional specialisation characteristic of organisational structuring in Britain is the inherent inability of actors to comprehend and appreciate an issue from the perspective of a different function.

The substance of respondents' comments in this section has indicated that the innovation process cross-nationally was underscored by differing ideologies. Notwithstanding this difference, one feature common to this process in both countries emerged. Although incremental changes in work organisation had occurred over time, as was mentioned earlier (page 328) the main developmental thrust of computerisation had flowed from pre-existing manual working arrangements. The influence of pre-existent organisational structures on the nature of technical

change was affirmed by those respondents who had observed the developmental process over time (cf Child et al 1987) - Exhibit 7e below.

Exhibit 7e

Technology following structure

"Then compared to now it was a very small operation but all the activities were done centrally, we had a central accounts department since the '50s. Over time we had new computers....so now we have most of our EDP within the central IBM computer."

(Respondent 3, WG Organisation I)

"Re-organisation because of new technology, no we wouldn't do it for that reason, we'd do it because we thought it was right, perhaps the setting up of this outfit Group Information Services which didn't exist four years ago, that's about the only thing."

(Respondent 2, UK Organisation II)

"Any company/corporate re-structuring as a direct consequence of introducing new technology. That's the wrong way around, you know that don't you, you don't make the management fit in with the computer, you make the computer fit in with the management."

(Respondent 1, UK Organisation III)

"Of course, the organisation has grown over years and you really can't change the organisation because you have different software."

(Respondent 1, WG Organisation III)

"I suspect that most of the administration systems which were manual are now computerised but they've just replaced rooms full of clerks by a computer system and they didn't stop to think that there might be a different way of doing it. We've become extremely expert at building a computer system which is very close to what a room full of clerks would look like."

(Respondent 1, UK Organisation IV)

"We only computerise what we already do."

(Respondent 1, WG Organisation V)

"There wasn't much point installing computer systems because everything was going to change. Then having done the change we inherited a Univac mainframe and lots of systems from the Univac side and IBM from the refining side, so then we had the problem of incompatibility."

(Respondent 5, UK Organisation VI)

"What has been done of course is that better EDP programs, better checks, quicker etc, but the development of the main things which are done here have always been the same since 1955 or earlier."

(Respondent 1, WG Organisation VII)

"We're still in the process of developing our procedures but even the old ones were integrated, the material system was integrated with the accounting system."

(Respondent 5, UK Organisation VIII)

"I joined in 1966 and there were no computer systems then, all the work here was done by hand, we had a bookkeeping system with cards etc, then during 1972-3 we developed a new system with an outside bureau to work then with an invoicing machine....then we started with our own ICL computer, in fact the invoicing system was based on the old one, still is, still the basis of that system exists."

(Respondent 1, Dutch Organisation IX)

The embeddedness of computer systems development within pre-existing structural working arrangements was also perceivable in the three Organisations (I, VI and VIII) which located operating sites and head offices geographically apart in both countries. In Organisation I in Britain at both corporate and company head offices large, automatically-interfaced financial and management accounting information databases had been developed. This enabled those within management accounting departments to automatically download actuals data and manipulate these data within complex financial modelling systems. No direct interfaces to the refinery had been built. Transaction accounting work, such as local accounts payable and payroll, had long been established at the refinery and much recent development effort had been concentrated on computerising this latter system.

This same transaction accounting work was not undertaken at the German refinery but at head office. Here, a highly complex,

integrated financial accounting system (see **Appendix 4**) had been developed over a period of time. There was no automatic interface (and none planned) between the databases maintained by financial and controlling departments, actuals data from the former to the latter was transferred via hardcopy. However, direct electronic communications had been established between the head office controlling and refinery despatch/commercial administration departments. The nature of these developments reflected the differing cross-national perceptions of functional connectedness. In Britain, a closer relationship existing between financial and management accounting head office functions and greater distance between head office and operating site locations where the latter undertook a combination of financial and management accounting activities. But in West Germany more of the financial accounting work was centralised at head office, this was distanced from head office controlling work which, itself, was perceived as more closely related to the 'doing' functions of the business, marketing (viz the selling/marketing experience of controllers) and production. Commercial work activities at the operating site also emphasised production rather than administration.

The main thrust of computerisation in Organisation VI was similar within each country, different between the countries. The British head office management accounting department had had long established direct access to financial accounting data but no direct links to the refinery. As was described in Chapter 5.3.2, the large refinery finance department executed far more trans-

action and management accounting activities than the Rechnungswesen/Despatch department in the German refinery. The systems in the British refinery were a complex web of databases, different systems and linking interfaces with no apparent separation between the two accounting activities. The German refinery maintained direct links with the head office controller's department and all data from the centralised basic bookkeeping to the controller's department was transferred via hardcopy.

The smaller size and fast moving consumer goods business of Organisation VIII had clearly influenced a progressive approach to systems development in the commercial functions in both countries. The difference lay in where databases and information processing were located. Differences in systems development had following the pre-existing cross-national differences in the distribution of accounting work between the different company locations in each country. In West Germany, where the Commercial and Technical Directors jointly managed the factory, the only computerised system in the commercial department was a small, on-line, stand-alone stores and repair costs facility. At the German head office, the financial information systems were integrated with systems for materials purchasing and disposition, sales and distribution, and planning. These systems utilised a combination of on-line and batch processing techniques, the databases and batch processing were functions of mainframe facilities at the corporate head quarters.

In Britain, processing the company's total payroll, most accounts payable, management reports and period-end accounts had been sited at the factory before the development of highly advanced factory systems which integrated all the financial activities within a wider 'materials flow' system design (materials accounted for 70 per cent of operating costs). With the final installation of a general ledger package, remaining accounts payable work (for marketing) was transferred to the factory and direct communications interfaces established between the factory and the head office for accounts receivable and sales/marketing data transmission. Direct links were also installed for transferring period-end financial accounting data to the corporate head quarters. Again, whereas in Germany there was a clear distinction in the perceived purpose of the head office (administration, consolidation) and the operating site (production): in Britain, with much of the company's financial administrative and consolidation work undertaken at the factory site, this perceptual distinction was far less definitive.

If the nature of technical change follows the structure of pre-existing working arrangements (cf Child et al 1987), the implication is that changes in work organisation, associated with new technology, are primarily influenced by precisely the same factors which influenced work organisation prior to technical change. If, as this thesis has argued, these core factors cannot be other than culture-bound, then the nature of technology itself becomes, at most, a secondary or ancilliary influence.

7.5 MAJOR DEVELOPMENTAL STAGES OF TECHNOLOGICAL CHANGE

7.5.1. Centralised Batch Processing

In Britain large corporations began installing mainframe computers at the end of the 1950s. These machines utilised the technique of **batching**, that is, where similar types of data are processed in batches through each successive stage - validation, sorting, calculating, updating and printing. Because this technique was and remains most suitable for processing large amounts of similar, numerical data, early mainframe processing was applied to accounts data. This historical connection was still sometimes reflected in organisational structuring where, usually at a senior management level, the computer development resource was the responsibility of a finance manager. This was also apparent in West Germany where firms supported a computer development resource but, as Table 6.8 below showed, there were no consistent cross-national differences in the location of computer departments within finance functions which might have influenced other consistent cross-national differences, such as those relating to the systems design process discussed in the previous section.

Initially mainframe computers were monolithic and the capital outlay required placed a premium on a high utilisation factor. In Britain data preparation departments, which converted data into machine sensible form, and computer expertise centralised around the mainframe installation. The highly technical and, alleged, autocratic nature of computer departments meant that computing

expertise was, and perhaps then could only be, disseminated in the most superficial manner.

In routine transaction accounting departments, the previously manual and internal procedures were now interrupted as validated and reconciled data, such as accounts payable and receivable, payroll etc, were then batched prior to transference by physical means to the computer department for processing and updating onto files. This effectively removed elements of immediate procedural control from accounting departments as the accurate transcription of financial data onto punch cards and tapes fell within the jurisdiction of data preparation functions. New control mechanisms, such as standardised definitions of financial data, coding structures, computer input forms etc, were instituted in addition to the many manual checks which continued to exist.

Generally, with centralised computers performing an interim part of the processing work, the amount and variability of clerical financial accounting work declined whilst the degree of standardisation or homogeneity increased. Certainly in large firms, high degrees of employee, sectional and departmental task specialisation were accepted as the most efficient way of organising accounting work. Homogeneity militated against flexibility, that is, broad accumulations of skills/abilities and inter-departmental exchange of employees, particularly since practical experience was of higher regard in the absence of more accomplished general

levels of modern education and graduates being less proliferous than today.

"You used to have a class of manager whose main attribute was that he'd been around for years and knew how the system worked. He didn't have to think very much to manage the system, that was all laid down for him....what he needed more than anything was experience of all the quirks of the system."

(Respondent 1, UK Organisation IV)

Accounting departments were conspicuously labour intensive but inconsequently so given Britain's powerful international trading position in the economically buoyant early post-war years. Accountants, frequently trained under articles and chiefly in the role of historical recorders occupying the supervisory and/or managerial echelons, principally discharged control functions, ensuring the authentication and accuracy of data prior and subsequent to the protracted techniques of computerised batch processing and statutorily recording transactions in the books of account (or ledgers). Thus, task specialisation, narrow spans of control and tall management hierarchies were common features of accounting department structures.

Whilst management accounting was an established activity, budgeting, financial analysis and control had not then assumed its subsequent scale of importance. Partly because Britain's economy was robust and growing, partly because of limited understanding of internal and external business inter-relationships and partly because much management accounting information was closely related

to and derived simply from the actuals data which was subject to slow and periodic processing and not normally available until weeks after the period-end. Many currently utilised categories of this information could not be analysed punctually enough to be of any ongoing practical use in the control of business performance either at operating or higher management levels.

For example, at a strategic level, given complex structures, inter-organisational trading relationships and the procedural and political, complications of transfer pricing, the practice of isolating and measuring the profitability of discrete business units, much less an integral part of the productive process within that unit, was simply too time consuming and error-bound to be a worthwhile management decision making instrument.

At operating level, a sudden rise in factory raw material wastage might not come to light until the batched monthly stock and cost calculations returned to the factory by which time either the problem had already been resolved on the shop floor or, if not, it was still too late to save the period's increased variable cost overhead. Or, for example, monthly processing of sales invoices meant that sales and customer profiles were not available until several days after month-end. Incoming revenue was tardy, customer credit ratings could not be checked prior to despatching orders, upturns/downturns in demand would not be apparent for some weeks and long time lags characterised the process of production

planning and raw materials ordering thus stock holding levels were high to cover contingencies. All of which affected cash flow.

In essence, the current status of financial information files were not accessible. In addition, the welter of contingencies which might affect strategic planning could not easily be translated into unit terms and incorporated into business models. Early matrix modelling techniques were hampered by adequate understanding and corrupt or unreliable actuals data. Planning processes were lengthy and the turn around time of senior management decision making was relatively slow.

Whilst the West German respondents in Organisations I and VI, which had been established pre-war, confirmed the major work organisation implications at this stage of technological development, Exhibit 7f below indicates the confusion in the former West German subsidiary following initial attempts by the British management to introduce electronic data processing where systems had been designed according to existent finance work organisation principles in Britain. At this early stage the parent company appeared to take no account of important socio-economic differences in the Federal Republic which reflected in industrial working arrangements - concerted national effort towards the urgent re-construction of the economy pivotted on the success of manufacturing industry; management accounting was an inchoate activity in finance departments of ancilliary importance, geared to legalistic imperatives. Thus, the departmental size ratio of

finance to production relative to British firms is likely to have been lower.

Exhibit 7f

A cultural divide: work organisation and new technology

"When I came here in 1957 the centralisation of accounting was just starting....there was awful confusion in the starting period they [British management] like to start with 30 people, in the end we had 70.

In West Germany we have a different accounting philosophy, we have a so-called Finanzbuchhaltung, that's the financial accounting and a so-called Betriebsbuchhaltung but that's more internal [management] accounting....insofar as the results of the financial accounting were given to this Betriebsbuchhaltung they made a lot of fun with it....in the end they were nonsense....and there was another development depending on EDP because if you start an original entry, say customer's invoice all the other things are DP but if you have these two departments, there was a border so all the results you had in the financial accounting, you had to do the input once more in the internal and all the spread over that, so if you had EDP it was no longer possible to have these original data sets brought into another section and the contents of the financial positions were lost because by this first entry all the other information was produced, say for profit and loss account.

When we stopped that we had a large improvement on EDP operations.We were very much limited from this side so we decided to have our books in our basic operations following the fiscal rules and naturally anybody in London dreams that we have a worldwide coding system, well it's impossible because I have to fulfil the West German fiscal requirements....And so far the more EDP development was successful, there was no room left for this internal cost but instead of that there were management information systems which were statistical and so far we only have one accounting system which is financial."

(Respondent 3, WG Organisation I)

Severe shortages of skilled labour also underlined a requirement in the new Federal Republic to capitalise on the available skills/abilities of the workforce, a need supported by an education

system reformed and now supplying the economy with broadly and vocationally educated employees. From the basis of deeper knowledge and wider commercial experience, these employees were likely to more flexible and capable of assuming responsibility than their British counterparts. Thus, conjecturally, relative to company size, West German finance functions would have been smaller, hierarchies shorter and spans of control wider than those in Britain.

7.5.2 Micro Computing

Technological change in Britain between the 1960s and 1980s was integral to and encouraged by dramatic changes in the corporate trading environment. The 1960s saw a progressive concentration of companies into fewer corporations of immense international stature and complexity. Mergers, acquisitions and innovations also encouraged corporate diversification, product/market differentiation and intensified intra-corporate trading which, in turn, increased the volumes and complexity of accounting data and the need for specialist financial expertise. Then, the oil crisis in the early 1970s, the rising industrial nations and subsequent economic recessions compromised the position of British industry in world markets and highlighted its inherent lethargy. Additionally, changes in world demand and supply market profiles, rising inflation and fluctuating interest rates, increased sensitivity of commodity and currency prices, volatile social and

political circumstances have all tended to promote economic uncertainty and sharpen the edge of competitive trading.

The arrival of the micro, or personal, computer was a watershed, in a decade this industry has grown from nothing to a billion dollar business worldwide. Prior to the current concentration of hardware and software manufacturers, micro computing progressed through three distinct changes of emphasis. The first phase, beginning about 1974, appealed to the hobbyist market, home computers which could play games! The second, and most significant, phase was initiated in 1977 with the launch of the Apple II designed to run Visicalc, the most popular of all spreadsheet packages. [3] 1981 marked the beginning of the third phase when International Business Computers (IBM) exploded onto the market with the IBM Personal Computer. By mid-1984 the IBM PC had captured almost 30 per cent of the European 'professional' personal computer market largely because, unlike dedicated applications, the IBM PC could be utilised in conjunction with 'integrated' software which enabled the business user to move easily between spreadsheet, database and graphics functions with considerable implications for financial analysis and evaluation, modelling and planning in times of economic volatility. The additional word processing and communications capabilities are not, thus far, so widespread.

Increasing utilisation of micro computers has also been encouraged by a combination of decreasing hardware costs together with

increasing processing power: the number of millions of instructions per second (MIPS - the measurement of processing power) is now equivalent to that which, just a few years ago, required minicomputer capacity. Additionally, software has become cheaper, more extensive and sophisticated, and increasingly user-friendly. [4] Low capital outlay and maintenance costs, processing power and speed, ease of use and versatility have promoted the popularity of micro computers in every organisational function. Moreover, direct interaction with desk-top screens has expanded computer literacy, in turn, helping to erode the 'black box' syndrome and de-mystify the science of computing.

The West German business personal computer market is dominated by IBM and Apple, with roughly equal market share. Penetration is estimated at 360,000, significantly lower than Britain which is the largest market in Europe and, worldwide, second only to the United States. The British market is dominated, more or less equally, by IBM and ACT (Applied Computer Techniques): this strong position of an indigenous producer is believed to be one of the factors contributing to the early and buoyant demand for personal computers within the business community. Other factors may include, (a) keen interest in new technologies in the domestic market; (b) strong indigenous skills in computer technology especially a thriving software industry producing its own programs which have stimulated the market; (c) although Britain has a relatively high number of mainframe computers, there are far fewer smaller business computers than in West Germany, thus PCs offer

British business users a comparatively higher degree of flexibility; (d) perhaps the most influential factor, the common language provides technologically advanced American producers immediate access to the British market. This is particularly important in the development and production of software which can easily be adapted for British use (Financial Times Surveys 3 December 1984, 4 April 1985, 15 April 1985; Bird 1985:65).

It is generally recognised that, of British occupational groupings, accountants are one of the heaviest users of personal computers. There are over 800 different accounting packages available ranging from sales ledger systems to payroll, invoicing, bought and nominal (or general) ledger systems, spreadsheet financial planning packages, sales analysis and stock control. There are also more specialist applications such as those promoted by banks for use in corporate treasury departments - world wide company balances can be accessed, cash moved from one account to another, bills paid, reports received automatically from company branches and the information manipulated. Multi-currency accounting is another specialist area, programs (for example, Lyric Business Systems) offer multi-currency analysis and reporting and will translate Sterling into an overseas parent's currency using SSAP 20 (or FASB 52) (Financial Times Survey 1 May 1985).

Although personal computer software is available for financial accounting functions, the scale of these activities in the sample

of British firms required mainframe MIPS capacity for transactions processing. Nevertheless, there was widespread use of personal computers for financial modelling, analysis and planning purposes. This utilisation was expected to increase as computer literacy improved. Personal computers were less in evidence in the German firms because either the approach was generally more cautious (for example, Organisation III) or the firms were smaller and did not have a policy of providing 'one per desk' (Organisation I) or the firms were not operating autonomously and, therefore, gained less utility from the analysis and planning facilities of micro computing (Organisations II, V, IX).

7.5.3 Information Technology

Information technology (IT) is the linking of computers and telecommunications. Data may be input via a remote terminal at one location, converted from a digital to an analogue signal by a modem, transmitted automatically via a standard telephone line and the signal reconverted at the receiving location. Processing of this data may take place at the data input or receiving location or at any point in the communications network. The potential of IT for changing work organisation is enormous but the movement towards establishing networks [5] is taking place slowly in discrete stages.

In some of the research locations data preparation onto a medium such as magnetic tape prior to mainframe batch processing had been

replaced by on-line data entry via remote terminals. In earlier stages, these data were validated and stored locally on tape or disc media for subsequent mainframe batch processing. More advanced systems operate in real-time, that is, on-line processing is linked permanently to a database (data stored on a set of interrelated files) allowing each transaction to be processed on an individual basis through all processing stages. This is known as interactive, transaction-driven processing and is tantamount to continual file updating. Direct file review and retrieval via an electronic device (either a Visual Display Unit or a Personal Computer) displays the current, up-to-date (or real-time) status of any file which is not possible with periodic batch processing and computer printouts. Batch and real-time processing modes were not mutually exclusive in the topology of highly integrated systems linked to a database.

As these systems become more sophisticated, they are not only self-controlling (or adaptive) but act as effective operation-controlling mechanisms, for example, automatic coding, data input and totals checks, debtor screening and selective credit veto. In these respects previously manual controls are built into the design of systems to enhance processing reliability. Nevertheless, it is the reactive speed and integrative power which represents the essential difference between IT and its electronic predecessors. For example, in complex process technologies, inputs are automatically measured, sensors within the reactors constantly gauge the reaction and automatically adjust inputs

according to variances in conditions, and automatically measure the outputs. These inputs and outputs may also be automatically transmitted to other locations, say, an accounting department and converted into costs complete with variance reporting.

Although systems design and architecture inevitably impose a degree of rigidity in terms of how and where work is conducted, successive software and telecommunications developments have tended to widen the choices of systems design available and increase overall systems versatility. Whilst automated processing, control and data transfer may now be functions of the technology, the developments in technology have, in turn, expanded the possible configurations of work organisation - how and where the remaining work is done and who does it.

In all except a single case study, technological change was incremental and relatively slow, technological implementation following years behind the availability of the technology. The reasons most frequently suggested were shortages of resources and the considerable costs of changing systems. The most influential factor on the character of technical change, however, appeared to be the same assumptions and values which had underpinned pre-existing work organisation: the advance of technology had not, in itself, produced episodic visions of changes in working arrangements.

7.6 SUMMARY

There was no consistent corporate policy towards nor a consistent combination of corporate influences on technical change across the sample companies. Apart from the West German Organisations IV, V and (Dutch) IX, the companies enjoyed a high degree of autonomy in the initiation, selection and implementation of computer systems. This autonomy and the differences in capital spending gave rise to considerable variability in the sophistication of systems being utilised throughout the sample although there were no apparent differences between the companies in new technology investment budgetting and justification procedures.

The movement towards increased computerisation stemmed, in both countries, from macro-economic organisation, from straightforward price competition in the market-place and changing market-place structures which conferred pressures to reduce the costs of production in the widest sense. Computerised systems were commonly held to increase operational cost effectiveness because of enhanced reliability and speed of transaction processing. More specifically in management accounting in Britain and controlling in West Germany, the improved flexibility of management information processing and the integrative function of communications technology were seen to lend greater effectiveness to operational control and reliability to management decision making.

There were, however, contradictory responses between (and within the same) companies surrounding job displacement as a motive underlying technical change within the broader compulsion to reduce the costs of production. Whilst 'reducing the people' or 'saving jobs' often explicitly featured in the cost justifications for the development of computerised systems, generally the evidence suggested that decisions to rationalise, and hence shed jobs, preceeded the demand for computerised facilities and the reduction of labour was not a concrete condition of subsequent systems implementation. Thus, the motivation underlying job displacement may be more directly related to trading conditions per se than as a perceived benefit of technical change.

The possibility of transferring 'expert' work tasks and abilities to subordinates was suggested only on one occasion (in West Germany) as a reason for computerisation. Here, however, and against the specifically British institutional phenomenon of accountancy discussed in earlier chapters, it was clear that the respondent's perception of 'expert' was underpinned by skills and abilities accumulated through practical experience and not on the basis of theoretical measurements manifest as paper qualification. Whilst the programmable nature of theoretical knowledge and subsequent transference of previously expert work tasks did not appear to have undermined the expert's role where this role had developed alongside technical application, the question arose whether the same principle would apply where 'expert' was determined essentially on the basis of theoretical measurements,

such as that within the British companies and conferred by the British accountancy bodies: and which, as contended in Chapter Six, largely determined the division of labour within finance functions and, hence, the higher status, economic rewards and concentration of indeterminate work tasks within managerial echelons. It was suggested that, since theoretical knowledge is programmable, the ontological and epistemological basis of accountancy qualification in Britain ipso facto affords no protection against professional deskilling: the actual protection lies in the same source of political power which has hitherto determined the advantageous position of qualified accounting actors in the division of labour characteristic of industrial finance functions and within the labour process generally. A further imponderable, discussed in the next chapter, concerns the maintenance of this political power in the context of sustained economic pressures on British industry.

Turning to the constituent processes of innovation, the research findings clearly suggested that (a) during the systems design and implementation stages, the intellectual and practical input of potential users/beneficiaries of computer systems was considerably higher in West Germany compared to Britain: and (b) the formation of computer departments was underpinned by differing cross-national philosophies. The Federal Republic relied far less on educationally specialised and formally defined computer experts and far more on those actors from user departments who 'had a feel' for computing than was the case in Britain. These aspects,

together with a consistent policy in the larger German firms of regularly transferring finance personnel between wider 'commercial' functions including computing, and the evident aggravation, or at least lack of understanding between British finance and computing actors, indicated that a major weakness of the rigid functional specialisation characteristic of organisation structuring in Britain is the inherent inability of actors to comprehend and appreciate an issue from the perspective of a different function.

Notwithstanding these differences, one feature common to the innovation process in both countries emerged as the embeddedness of technical change in pre-existing working arrangements. From this propensity derives the major implication that changes in work organisation associated with new technology are primarily influenced by precisely the same factors which influenced work organisation prior to technological change. A principal contention of this thesis is that these core factors cannot be other than culture-bound, technology itself then becomes, at most, a secondary or ancilliary influence.

Finally, the major developmental stages of technological change were described as a prelude to the examination of new technology on work organisation of industrial finance personnel in Britain and West Germany. The discussion now moves to this final chapter in Part Two of the thesis.

Notes to Chapter Seven

1. The principal distinction here between users and beneficiaries is that whereas the former applies to those individuals who physically work with computerised systems, the latter corresponds to those (largely managerial) incumbents who may not actually physically use technological systems but, nevertheless, necessarily receive and utilise the processed information products of such systems. Thus, whilst a finance department may comprise both users and beneficiaries, in every case study in this research the department itself was found to be a user department.
2. The full implementation of this royalties accounting system was expected within 18 months, the manager of the Royalties Accounting Department, respondent 3, had not been involved at any stage of the design process and could supply not any information concerning the operation of the system or possible effects on the department subsequent to implementation.
3. A spreadsheet software package allows the construction of a model of a set of interrelationships expressed in numerical form and formulae. These appear on the computer screen as a matrix of rows and columns. When a change in the numerical value of any single parameter is made, the program will automatically change all the other numerical values according to the nature of the interrelationships built into the model. The initial applications of spreadsheet packages were in areas of financial analysis, planning and forecasting.
4. 'User friendly' is a system with which relatively untrained users can easily interact. There are often graphical representations but the term user friendly implies the use of a high level programming language which means that available choices and instructions in the techniques for manipulating data appear on the screen in English. Utilisation of application packages may require particularistic conventions but this only involves remembering which keyboard characters to depress in order to enter and use a program. Thus, no technical knowledge of computer programming is necessary.
5. In the context of information technology, a 'network' normally refers to a system of physically dispersed computers or terminals interconnected by telecommunications channels.

CHAPTER EIGHT

CROSS-NATIONAL COMPARISON OF NEW TECHNOLOGY AND THE WORK ORGANISATION OF FINANCE PERSONNEL

- 8.1 INTRODUCTION
- 8.2 FINANCIAL ACCOUNTING
 - 8.2.1 The Structure of Departments
 - 8.2.2 The Quality of Work at Different Hierarchical Levels
- 8.3 MANAGEMENT ACCOUNTING/INFORMATION OR CONTROLLING
 - 8.3.1 The Quality of Work at Different Hierarchical Levels
 - 8.3.2 Changing Work Roles
- 8.4 THE QUESTION OF CONVERGENCE
- 8.5 SUMMARY

8.1 INTRODUCTION

The previous chapter examined the underlying reasons, constituent processes and major developmental stages of technical change within industrial finance functions cross-nationally. This chapter now explores in more detail the ways in which the main developments in computing technology have affected the work of finance personnel. Section 8.2 concentrates on financial accounting, the effect on work structuring of the implementation of large batch processing systems, incremental improvements in those systems and the development towards on-line, transaction-driven processing techniques.

Whilst there was evidence in both countries of a progressive elimination of routine, manual tasks at lower hierarchical levels, in Britain poorly educationally qualified staff who previously occupied these positions are simply not being employed, the educational profile has moved sharply upwards and respondents in all the British companies suggested that the quality of work is polarising. By contrast, in West Germany no changes to recruitment policies were reported, polarisation of work did not seem to be evident as more qualitative responsibilities are continually delegated downwards. A selection of respondents' observations from both countries has been consigned to **Appendix 6**.

Section 8.3 explores the field of management accounting or what was generally called business economics or controlling in West

Germany. Here again cross-national differences in work organisation principles appeared to be evident. In Britain, whilst increasing use of micro computing facilities has upgraded the analytical and interpretive content of work in the discipline as a whole, it appeared that senior managerial levels were trajecting their roles into areas of increased indeterminacy on the basis of increased analytical output from lower levels. In West Germany, the tendency to delegate judgemental responsibilities downwards appeared more visible.

Driven essentially by economic conditions, three developments within British accounting appeared, *prima facie*, to be emulating the German model, (a) an increasing decoupling of management from financial accounting; (b) the transmission of financial monitoring of productive operations to production functions; (c) structural and operational strategies to integrate management accounting into a wider commercial environment.

These developments, however, were not considered to be tantamount to a technology-driven convergence between Britain and West Germany because, as Section 8.4 discusses, the manner in which technology is being utilised appears to be reinforcing the cultural differences which indicate the single most influential factor underlining the organisation of work - values and philosophies regarding human resource strategies.

8.2 FINANCIAL ACCOUNTING

8.2.1 The Structure of Departments

In the previous chapter, Table 7.4 indicated the main features of each Organisation's computer resource and the approximate time spans of computer resource and systems development within finance departments. In Organisations II, III, VIII and IX the establishment of in-house systems design and development expertise had been relatively recent: in others (especially Organisation I) a wider based computer resource, including, for example, micro computing and software packages consultancy services, had accumulated gradually over a long period alongside the installation of machines. There was only one case study (British Organisation IV) where a major financial systems development had been sufficiently large, rapid and recent whereby respondents were able to supply accurate and reliable data contrasting work organisation before and after the implementation of the system.

"It was a 25 man-year project over two years [1979-1981]....so we saved about 60 jobs for an investment of between £1-1.5 million....the payback on the system occurred eighteen months after."

(Respondent 2, UK Organisation IV)

In Section 8.3.1 we will return to this case study. In all other case studies the incremental nature of computer systems development precluded direct longitudinal comparisons. There were, however, consistent trends within financial accounting across the sample companies. An assimilation of the variability

in size, function of research locations and nature of computer systems throughout the sample revealed that the development from manual to batch processing, gradual modification and improvement of these techniques to the implementation of on-line transaction-driven processing had progressively eliminated routine manual financial accounting work at the bottom of organisational hierarchies (see Exhibit 8a below). It was not possible to estimate accurately the number of clerical jobs directly displaced by new technology because (a) hard data of departmental sizes from 1950s to 1980s were not available; (b) changes in departmental sizes also resulted from organisational re-structuring over time, particularly central-isation; (c) reductions in numbers of employees had also stemmed from rationalisation, especially closure of capacity, which most firms had experienced in varying degrees from 1979. Only British Organisations II and IX and Organisations II, III, VII and VIII in West Germany reported no factory or office closures during the 1980s.

Exhibit 8a

Technological substitution

"A lot of these developments take clerks out of the system...if you've got an on-line system, it cuts out all the clerical handling of paper....there has been a displacement of large numbers of clerical staff."

(Respondent 5, UK Organisation I)

"There's a very close connection with EDP and the other is to the personnel staff section because we're now 160 and before we were 270."

(Respondent 3, WG Organisation I)

"The system has sufficient logic built into it that it can work through that mass of paper on those accounts outstanding and build up a picture of the 1500 invoices that that cheque is paying and that is a tremendous labour saving. We had dozens and dozens of people just involved in that sort of task."

(Respondent 1, UK Organisation IV)

"In transaction accounting, the functions that he's carrying out, three years ago he had 270 people, now it's 180, so that's the extent and he's done that primarily by improved systems. He had the basic systems but he's linked them and made them more efficient."

(Respondent 1, UK Organisation V)

"It's gradually reducing the numbers of people needed, no doubt about that....It's to do with, if one is honest, getting rid of the boring, rotten jobs which people don't really want to do."

(Respondent 3, UK Organisation V)

"What's happening is that you build your architecture so that once the transaction's caught, it just goes up through a series of pyramids and becomes more summarised and apart from the person who picks up the disc or the tape, people are being progressively excluded from (oil) terminals to head office."

(Respondent 5, UK Organisation VI)

"On the bookkeeping side the developments have already been introduced and the change in attitude has already happened, than on the management information side where we're just in the process of change. But on the bookkeeping side the department is smaller and you see the department heads really do work on the screen and even do their typing on the screen."

(Respondent 2, WG Organisation VI)

The large scale of technological clerical job displacement, suggested in Exhibit 8a above, was most keenly observed by respondents in centralised accounting departments of the larger firms [1] which also utilised more advanced computer systems. That is, where more of the processing had been computerised, more interfaces had been built between the different databases and transaction processing systems, and where systems were on-line - direct interaction between keyboard data entry and the central processing unit of the computer.

In Britain, one direct extension of the progressive elimination of clerical accounting actors in large companies has been a concomitant reduction in the need for supervisors because,

"although you're called accountants, a lot of the job was actually trying to sort out the problems that were created by errors down the line. Now if you eliminate those errors, you eliminate the need for people to enquire about those errors."

(Respondent 5, UK Organisation I)

"All the while you've got X per cent of people whose only job in life is to solve problems, problems which are caused by other people, take those out, they can't cause problems so the whole process becomes more reliable to the point where you don't need the people to solve the problems which aren't being created."

(Respondent 1, UK Organisation IV)

These 'errors' and 'problems' were often but not always attributed to clerical accounting staff. Batch processing techniques required the conversion of batched data into machine sensible form by data preparation departments, checking the accuracy of data input could then only be done after the batch had been processed and computer printouts returned to accounting departments. On-line techniques have eradicated the need for this intermediate stage of data conversion: thus, together with data entry validation and control checks built into computer systems, the whole transaction processing and auditing trail has been brought back within the ambit of financial accounting departments further increasing both the speed and reliability of data processing. Over time this increased administrative efficiency has progressively eliminated lower level clerical jobs, in turn reducing the numbers

required at higher levels in departmental hierarchies, tantamount to "*a sharpening of the pyramid*" (respondent 4, UK Organisation IV).

Organisational situations were too complex to accurately assess the extent to which this sharpening, influenced by technology, had penetrated the highest managerial echelons. In the West German Organisations I and VI for example, there had been recent reductions in main board directors but both firms had also experienced severe closure of capacity since 1979. Generally, though, this sharpening of the pyramid was less evident in the German companies due to a complex interplay of factors, the independent influences of which were impossible to isolate. Firstly, since all of the German companies were smaller than their British counterparts, thus absolute numbers by which departments could be reduced were smaller. Secondly, it may not have been possible to reduce numbers on the same scale as in Britain because of the stringent accounting and tax laws which require the recording, storage and reporting of statutory accounts in far greater detail, all accounts must be kept separately and even single transactions must be transparent and accessible to enable cross-referencing at any processing point. Thirdly, as was demonstrated in Chapter 5.3.2, financial accounting in the three 'very autonomous' German companies (I, VI and XIII) was more centralised than in the corresponding British firms. An indication of the rationalising effects of centralisation was provided by the British Accounting Manager of the transaction accounting centre of Organisation V,

"the best example is the payroll department, there used to be three payroll centres and 40 people in each, now there's one with 15 people here".

Fourthly, whilst there was a distinct trend throughout the sample that as the technology utilised became more advanced the numbers of financial accounting actors declined, the study was not longitudinal, it was a snapshot taken at a particular technological point in time in each firm. Thus, the length of time that more advanced technology had been utilised would have influenced the perceptions of the narrowing of the hierarchical pyramid of those respondents who participated in the research. The West German Organisations I, II, IV, and VI all appeared to have been utilising more highly integrated financial accounting systems longer than their British counterparts.

Finally, a recurring theme in this thesis has been the relatively less specialised socio-economic function of accountancy in the Federal Republic (Chapter 4.2, the education system; Chapter 5.3.2, structural comparisons; Chapter 6, comparison of work roles; Chapter 7.4, systems design and implementation). Further, Chapter 6.2 indicated that non-supervisory finance personnel in West Germany undertook a wider variety of tasks at qualitatively higher levels of responsibility than appeared to be the case within the British companies. Since Chapter 7.4 also demonstrated that technical change in both countries had followed pre-existing working arrangements, it is likely that, at comparative stages of

technical change and relative to company size, German companies would have employed fewer non-supervisory staff because employees at this and possibly all levels have traditionally performed less specialised tasks and had experientially grounded understanding of their roles, thus, reducing the probability of manual processing errors vis a vis British counterparts.

The less specialised status of accountancy in the Federal Republic also extended implications to the distribution of accounting activities between firms' different functions. Chapter 6.3 contended that the primary responsibility for financial control of production in the West German firms rested with production and not within finance. Further, reports (for example, Organisation VI in the following Exhibit 8b) also indicated that much of the financial administrative activity of coding and checking documentation for routine transactions was executed in those departments where documentation originated and not in financial accounting functions as was the case in Britain. Hence, historically for a variety of reasons British financial accounting functions are likely to have been larger and technological substitution more visible and severe in its impact.

8.2.2 The Quality of Work at Different Hierarchical Levels

Subsequent to the study of technical change and the work organisation of accountants in Britain, as the research unfolded in West Germany it became clear that both the label of 'accountant'

was contextually specific and that non-supervisory British clerks and West German Kaufmännische Angestellter were not comparable socio-economic roles. Hence a fundamental problematic surrounding cross-national comparisons, particularly enjoining the vexed issue of clerical deskilling, for any assessment of work task degradation associated with technical change must take due account of the quality of inherent work skills prior to such developments. Clearly, two British clerks and nine non-supervisory West German respondents does not constitute a research sample from which any firm trends in work organisation within the lower hierarchical levels can be discerned. There were, however, indicators which provide a basis for conjecture.

Reasons commonly given for technological change (Chapter 7.3) in financial accounting were increased speed and reliability of information processing. Whilst error-free processing was part of this equation, only in Britain, as the quotes in the previous section suggest, were the errors 'created down the line' specifically held as a justifiable rationale by managers and computer personnel for the progressive elimination of human intervention at lower levels. Chapter Six explored the division of labour within industrial finance functions and argued that the processes of establishing competence and worth in the West German companies were underpinned by mechanisms which elevated the value of practical experience and abilities gained by 'learning on the job'. This value was also reflected in the structure of the education system (Chapter Four) where a large proportion of

national (and company) resources are directed towards vocational education which combines theoretical and practical traditions: financial accounting is integrated within a wider commercial environment. That high status is accredited to and notions of expertise founded upon vocational certification and practical abilities were evidenced by (a) the propensity of, even the most, senior managers to work and attain their Lehre before their college/university degrees (Table 6.3); (b) the continuing possibility of upward mobility without higher level academic qualifications (Table 6.2); and direct references by respondents (for example, Chapter 7.3).

Because West German industrial processes ensure that non-supervisory labour accumulates a wide knowledge and understanding of financial accounting concepts and a thorough appreciation of the interrelationships between this and other commercial functions, these employees did not appear to be perceived as a liability. In contrast to British firms, there was a preparedness to invest substantially in the human resource at lower levels and then trust actors at these levels with high degrees of qualitative responsibility. A preparedness and trust which does not appear to have diminished with the progressive computerisation of data processing (Table 6.4). Rather, new working techniques have been acquired within the educational provisions of the State and an ongoing process of learning by doing, responsibilities were accrued as this process moved forward. Consequently, as recorded in Appendix 6, whilst one respondent recorded a decline in the

proportion of lower grade jobs in one large financial accounting department (Organisation I), this was not tantamount to a decreased proportion of vocationally qualified employees. The educational qualifications remained the same, only the job grading profile was elevated. Of the West German firms only one (Organisation V) reported a change in policy towards increased recruitment of more highly educated employees but this was a means of replacing the younger, more recently apprenticed staff previously made redundant (in agreement with the trade union) following a severe rationalisation programme at the behest of the British management.

Chapter Six noted that the specification of British finance jobs included prerequisite educational qualifications, for clerical levels this did not embrace university degrees and professional certification. In the absence of these accepted indicators of potential ability, clerical labour remains highly specialised because subsequent processes of establishing competence and worth do not then allow for cumulative experience and understanding of financial accounting in totality and within the wider commercial environment. Without the armoury of this knowledge, understanding of financial accounting concepts remains mystified and, thus, the conduct of financial accounting tasks proceeds on the basis of very limited awareness of purpose and interrelationships. Employees who are not given the tools with which to understand the jobs they do are likely, perhaps always unwittingly, to make mistakes in the doing of those jobs. The unquestionable ubiquit-

ousness of these mistakes has sustained a belief that clerical labour cannot be trusted to do the job efficiently: instead of addressing the fundamental source of inefficiency and upgrading educational investment at this level, firms created supervisory and managerial tiers whose primary raison d'être was to correct mistakes and resolve consequent problems. Instead of human resource development, company managements embrace new electronic technology as the panacea which will eradicate the root of inefficiency perceived as stemming from clerical ineptitude.

Sorge et al (1983) have reported similar cross-national findings contingent upon the application of CNC (Computer Numerically Controlled) machine tools.

"German companies ally CNC operations to craftsmen's status and experience, but British companies do not necessarily do this. There is also a consistently held view in Britain that CNC results in 'operator deskilling'. This view is not shared by German firms.

The British firms appear to continue the more polarised qualification structure, whilst the German CNC applications seem to reduce training differentials between technical staff and the shop-floor personnel.

They try to increase the craftsmen's status, to give them greater flexibility in production."

(Warner 1984a:101)

The following exhibit is a cross-national checklist of possible effects of technical change within lower hierarchical levels of financial accounting departments. It is not constructed on the basis of primary data collected at the non-supervisory level but

from other sources, principally the frequency of managerial responses to the employment condition of subordinates. It is presented merely as a guideline to indicate areas which future cross-national research embracing technical change might usefully investigate. The crude grading from 1-10 indicates both cross-national differences and those relating to effects of technical change (B-Before, A-After) where the range refers to scores on each parameter from 1=extremely bad to 10=extremely good.

Exhibit 8b

Guideline: new technology and cross-national non-supervisory work

	UK/B	UK/A	WG/B	WG/A
<u>Parameters</u>				
1. quality and content of training	3	2	8	8
2. chance to suggest improvements	3	1	4	3
3. participation in decision making	1	1	2	2
4. freedom to choose own work methods	3	1	3	1
5. freedom to allot time to different task	3	2	4	3
6. freedom of physical movement	3	2	4	3
7. freedom of social contact	6	5	6	5
8. opportunity to use skills/abilities	3	1	5	5
9. level of qualitative responsibilities	1	1	4	4
10. task variation	5	2	6	8
11. recognition for good work	2	2	6	8
12. chance of promotion	2	1	5	4

The Council for Science and Society (1981) suggested that technological substitution was an essentially short term tactic complemented by a longer term strategy of ungrading the skills of the workforce. As Appendix 6 indicates, large scale technological substitution of clerical labour certainly seems to have occurred within British financial accounting departments, two reports

within Organisation I (where systems overall were probably most advanced) suggested that remaining clerical jobs had been deskilled and two reports from Organisations IV and VIII suggested the possibility of clerical job upgrading following technical change either because the amount of time spent on the higher graded tasks, such as customer contact, had increased or new skills, such as the use of keyboard data input devices, had been acquired. The upgrading of these clerical jobs, however, did not follow acquisition of a qualitatively higher level of skills.

Together with a sharpening of the pyramid, reports from the larger financial accounting departments in Organisations I, IV, V and VI suggested that the integration of previously separate sections or departments had accompanied the accrual of wider responsibilities of higher level managerial incumbents. Thus far, computerisation has reduced the number of supervisory and senior financial accounting departmental positions but increased the managerial responsibilities of those which remain. At top levels these additional tasks were cited as strategic or policy making.

However, all financial accounting managers confirmed that there had been a marked upward shift in educational requirements within financial accounting departments (Exhibit 6b). Technological change has been accompanied by a strategy of upgrading the prerequisite theoretical certification of the workforce whilst those previously clerical employees possessing no or a minimum number of CSE or 'O' level certificates are simply not being

employed. This is because higher automation is removing routine recording, checking and reporting work. Intermediate hierarchical levels are rapidly disappearing - many respondents envisaged a continuing or future polarisation into very low skilled data inputters at the bottom and highly skilled 'interpreters' of data at the top. The common belief within the British companies was that these highly 'skilled' positions would require greater 'analytical flexibility' for which university and professional qualifications remain essential prerequisites. Thus, any proposition that long term strategies of technical change include upgrading the skills of the workforce must embrace the possibility that the workforce itself changes character as a result of purposeful policies which permanently shed segments of it.

From this perspective it appears that the rigid mechanisms which underpin the division of labour within finance functions of large British firms (Chapter Six) are being reinforced rather than dismantled by social choices surrounding technological change. Increasing polarisation of labour-work appears to be increasing the visibility of these mechanisms.

Continuing technical change, however, may also endanger the position of financial accountants. Currently, the sharpening of the pyramid has generally been combined with the accrual of wider responsibilities for a declining number of senior managerial actors. Nevertheless, several reports suggested that more advanced information technology has already begun to or will

flatten the pyramid with the consequent elimination of managerial tiers. As automation progressively succeeds in capturing and validating transactions at source and communications/systems interfaces automatically process data into the books of account, onto balance sheets and management reports, further reductions in managerial hierarchies and demand for qualified accountants in financial accounting functions may become inevitable.

Notwithstanding these effects of technical change, the anticipation of accountants as a redundant professional industrial occupational group must address the continuing close relationship between financial and management accounting and, correspondingly, the frequent movement of actors between these two activities.

8.3 MANAGEMENT ACCOUNTING/INFORMATION OR CONTROLLING

8.3.1 The Quality of Work at Different Hierarchical Levels

The table below shows the incidence of informants' affirmative responses to the effects of new technology on the work of management accountants in Britain and those within controlling departments in West Germany (please see key following table). The informants were those, in both countries, who were either singularly involved in management accounting/information tasks or whose responsibilities spanned both financial and management accounting/information activities [2].

MAJOR EFFECTS OF NEW TECHNOLOGY ON THE WORK OF MANAGEMENT ACCOUNTANTS/CONTROLLERS

<u>Sample Numbers</u> (total = 63)	<u>BRITAIN</u>			<u>WEST GERMANY</u>		
	<u>SMHQ</u>	<u>SMOS</u>	<u>OTHERS</u>	<u>SMHQ</u>	<u>SMOS</u>	<u>OTHERS</u>
	6	5	22	4	5	16
	(+1 HQ/OS)			(+4 HQ/OS)		
<u>Effects</u>	<u>Incidence of Affirmative Responses</u>					
a) increased liaison with computer dept/project teams	1	3	4	3	2	4
b) increased responsibility for systems analysis, design specification, testing, implementation				3		8
c) given responsibility for developing IT strategies				3		3
d) given responsibility for investigating/developing PC software package models		1	5	4		5
e) increased detail/sophistication of reports supplied by subordinates using PC models	5	3		4		2
f) increased personal use of PC modelling techniques, decline in routine, manual calculating tasks offset by demands for more information within finance		1	22	4		10
g) time saved by new technology on routine tasks increases time on data analysis and interpretation	4	2	14	1		4

h)	time saved by new technology allows more time to be spent on staff development/management	1	3	2	3
i)	time saved by new technology allows more work of the same quality to be done with a decrease in in staff or without an increase in staff	2	3	6	3 6
j)	new technology enables wider span of qualitative responsibilities (lower specialisation)	1	3	4	7
k)	new technology enables increased emphasis on ad hoc analyses, problems (higher task variability)	3	1	12	2
l)	greater transparency of business performance increases judgemental role, knowledge of business in UK, input to strategic policy/decision making	4	3	4	5
m)	computer modelling has encouraged an increased emphasis on projections, forecasting, planning	3	2	6	3 1
n)	new technology enables increased delegation of work tasks to a lower level		1		1 1
o)	new technology increases the visibility/management of exceptional business performances	2	2	5	
p)	new technology increases work task performance visibility and thus accountability	2	2		
q)	new technology decreases the dependence of management accounting on financial accounting depts	4	1	1	
r)	faster availability of more accurate and detailed information has increased inter-functional liaison (increased need for flexible perspective in UK)	2	4	9	1 1
s)	new technology increases tutorial responsibilities towards production personnel			4	
t)	new technology enables production personnel direct access to financial information, ultimately this will result in annexation of financial monitoring responsibility within plants and the redundancy of cost/site/works/factory/management accountants	1	5		

Table 8.1

SM = Senior Management, the top two tiers of finance function line management in each location
SMHO, SMOS = Senior Managers in Head Offices, Operating Sites
OTHERS = All respondents below the top two tiers in each location
HO/OS = Combined Head Office/Operating Site, responses from these respondents have been included in Head Office columns

A preliminary examination of the table indicates that the average number of responses per British employee is higher (4.85) than for each employee in the German subsidiaries (3.52). This feature appeared closely related to the limited degree of operating and/or strategic autonomy of five of the eight West German companies because limited autonomy precluded the necessity for business analysis beyond formal requirements stipulated by the British parents, in turn diminishing the utility and raising the justification threshold of acquiring appropriate technology (especially personal computers and software packages). Limited autonomy, the automated production of reports for British parent companies (in Organisations I, II, IV and VI), the smaller size of the German firms and a generally more cautious approach epitomised by a fear of creating a 'hardware cemetery' largely accounted for the less prevalent use of micro computers in the German firms.

Thus although, in point f above, the high number of responses suggested increasing demands for more management information in Britain (23 responses from 34 respondents) was also reflected in West Germany (14 from 29), in the latter this was almost totally channelled into standardised and regular reporting requirements rather than any explosion of ad hoc or 'one off' analytical tasks as was evident in Britain (point k) and symptomatic of increasing specificity in business monitoring and control procedures encouraged by the greater analytical flexibility enabled by micro computing.

Notwithstanding fewer West German responses overall, the enhanced intellectual input of technology users within the innovation process in the West German subsidiaries was again indicated (points a-d). This is consistent with findings presented in Chapter 7.4 which suggested that the contribution of British users to the innovation process appeared to be minimal and that this was almost certainly related to the high degree of functional specialisation within the British sample which, in turn, stimulated misunderstanding, if not animosity, in the relationship between computing personnel and users (Exhibit 7d). Respondents in Organisations II, III, VI and VII suggested these characteristic difficulties unfolded during the innovation process and, without a robust project management structure, led to inappropriately designed and operationally inefficient computer systems.

Beneath the problems of inter-functional liaison, however, lay what appeared to be an emphasis on results and a disinclination to expend requisite resources in the conceptualisation and planning stages (Exhibit 7d). Whilst only Organisations I and VIII in Britain appeared to have applied conceptual rigour within strategic planning of technological developments within finance, not only was there more evidence of synchronised conceptualisation and a more cautious long term approach to information technology within the West German subsidiaries, but also formal responsibility for investigation, information structuring and formulation of a development plan for finance and beyond was not always the

prerogative of senior managerial incumbents. In two instances (in two of the four largest firms, VI and VIII) a non-supervisory actor discharged this task (Exhibit 7c). The principal implications of a higher level of user involvement in West Germany were (a) the downward delegation of related responsibilities; (b) a clearer managerial appreciation of the day-to-day problems and working arrangements of non-supervisory subordinates; and (c) more efficient data processing systems. We will return to these points.

Within Britain, the table above indicates technology-associated changes in work organisation along two different, though related, dimensions. Differences between hierarchical levels and between head offices and operating sites where the latter supports positions conventionally held to be of lower status within organisational structuring. At lower organisational levels, the unanimous consensus suggested that the time saved by computerised modelling and other facilities had been wholly or partly offset by demands for further information (point f above). Much of this demand underlined increased emphasis on analytical/interpretive tasks (point g), increasingly related to forecasting and planning (point m), and perhaps in the form of ad hoc or 'one off' frameworks (point k). This latter in particular stimulated interest by increasing task variation. Nevertheless, often this was not tantamount to the annexation of more indeterminate work tasks and qualitative responsibilities (point j), increased judge-

mental tasks and input to strategic policy/decision making (point 1), staff management/development (point h).

Rather, more affirmative responses in Britain suggested that, post technical change, the same quality of work was conducted by the same number or a decrease in staff (point i). Indeed, the number of responses here is probably underrated, while all the British companies had clearly increased management information requirements and only the Head Office of Organisation III had reported a rise in numbers of financial analysts, the connection between staffing levels and the effect of new technology was confused by de-centralisations and re-structuring (which considerably increased the workload for financial analysts), rationalisations (which decreased workload somewhat) and certain actors felt that they simply worked longer and harder with or without computer facilities.

The profile of these British responses suggests that new computing technology is progressively eliminating manual and more routine calculation task elements from management accounting functions at lower levels of organisational seniority. Whilst this work has become inherently more analytical, interpretive and projective, and this was a major factor underlying the universal requirements for 'relatively fewer staff of higher calibre' (Chapter 6.2 especially Table 6.1 and Exhibit 6b), in essence this implies ~~more~~ of the ~~same~~ rather than any escalation of substantively indeterminate work content, say, in strategic or tactical

judgement, policy or decision making within arenas which have real impact on the nature of business performance.

This scenario is corroborated by the absence of responses from senior management levels indicating that new technology is a factor enabling increased delegation of work tasks to lower levels (point n). As point f indicates, the personal use of new technology at senior management levels was virtually non-existent. This was because routine analytical work tasks, for which micro computing technology is most suitable, were not conventionally conducted at these levels: thus the utility of such tools remained questionable. So there was no sense in which senior managerial actors felt that computer technology provided leverage for downloading their work tasks to lower levels. Typically,

"....it's debateable whether it'll be valuable for me to have a machine in my room, I'll spend more time trying to grapple with the information than I really should whereas I've got people in my branch who are paid to do just that, to answer the questions."

(Respondent 3, Head Office, UK Organisation I)

Within the West German companies, the impact of micro computer facilities was generally less conspicuous: lower levels of personal utilisation (point f), less recognition of time saved (point g), less emphasis on ad hoc analysis (point k). Compared to Britain, however, at lower levels of seniority there was a higher degree of recognition that new technology enabled the accumulation of wider responsibilities (point j). This was

consistent with the relatively high response to point i, at senior head office and 'other' levels (though not at operating sites but here the nature of financial controllers' work was more technical/commercial than specifically financial), that new technology allows the same quality of work to be performed by the same number or fewer staff. Yet, this accompanied scant acknowledgement that computing facilities enabled the downward delegation of work tasks (point n). Since respondents were being asked to evaluate changes in work organisation along a comparative, longitudinal dimension (before and after the utilisation of new technology), the assessment of any changes were considerably influenced by working arrangements prior to technical change.

One thematic of the business economics or controlling function in the West German subsidiaries was the historical development and integrated nature of this activity within the wider commercial environment (Chapter 4, the State education systems and occupational institutionalism; Chapter 5, institutional influences and structural comparisons; Chapter 6, roles and responsibilities especially Tables 6.2 and 6.3; Chapter 7.4, systems design and implementation). The philosophical backcloth of the controlling function is that of 'service' to the core activities of production and marketing, to a large extent this has influenced the organisation of work certainly in the context of inter-functional liaison at all levels - hence, in part, the minimal response to point r, that increased inter-functional liaison has resulted from faster availability of more accurate and detailed information. At

the most senior levels, this inter-functional liaison was combined with direct participation in firms' macro decision making processes, as in Britain this activity had not been delegated downwards, not surprisingly since this was usually cited as the *raison d'être* of senior incumbents.

However, in every West German subsidiary, across a spectrum of technological development stages and range of company sizes, there was evidence that policy making, strategic development planning or responsibilities requiring judgemental integrity occurred to some extent at lower levels than was conceivable in the British firms (Chapter 6.2 especially Table 6.4, Exhibit 8c below). This was evident in financial accounting though not always in business economics functions either because these were non-existent or control was firmly exercised from the British side. Thus, whilst the time saved by technological substitution of routine calculations had enabled a widening of responsibilities at lower levels, the downward delegation of tasks had not been perceived as an important corollary because tasks of a substantive, indeterminate and judgemental nature were discharged at these lower levels prior to technical change.

Exhibit 8c

German hierarchical organisation of work - a cultural heritage

"We try to give them [non-supervisory staff] the work not to put in data without knowing what they do, not to do the work without

thinking. We have no one person in this office today which is doing this punching work, that is a very terrible thing."

(Respondent 4, third level down of 5, WG Organisation I)

"I have not to do the details in this department but the perspective especially to see through the whole company, meet and talk not only with the accounting but with all other sectors."

(Respondent 5, fourth level down of 5, WG Organisation I)

"The task of Frau X [third level down of 3], and she is responsible, is prepare documents for accounting purposes, the necessary tasks for the computer to print out payslips, bank transfers or cheques, analyse differences and do the general accounting work, for example, travels expense reports, added value tax returns."

(Respondent 1, WG Organisation II)

"Now he, Herr X [fourth level down of 4], should decide whether projects can be done in this department or we should go outside."

(Respondent 1, WG Organisation III)

"When I started here [fourth level down of 4] I was employed as a troubleshooter or special work, I had taxes, there were EDP changes etc....[now]....to look at the creditors system, the payments side, payments, cheques, to say how documents have to be booked, the way it should be done, to give instruction to get a proper balance at the end of the year or to show special things which are wanted."

(Respondent 5, third level down of 4, WG Organisation IV)

"The main program is from England, I think it's made for English accounting, now I have to re-organise the system of VAT, we're forced by the authorities to prove our VAT....then I will do the next...."

(Respondent 2, third level down of 4, WG Organisation V)

"At the moment we're setting up a completely new system of fixed cost allocation and I try to estimate the whole [group wide] thing....find out how to steer this instrument in a way people will accept."

(Respondent 5, fifth level down of 5, WG Organisation VI)

"It was the first on-line system in Organisation VIII and I became project manager [non-supervisory, fourth level down of 4]....[now]....there are three main fields, all the things which are connected with controlling the distribution, to discuss it with the distribution manager and the factory manager....I'm responsible for controlling a special group of products, the special product marketing manager and I have to make analyses, planning data with him and marketing together....The next field is marketing budget controlling, there was really nothing installed and now I try to get more discipline in these things."

(Respondent 2, fourth level down of 4, WG Organisation VIII)

"I [non-supervisory, fourth level down of 4] had the opportunity to make some projects, a buying system, a production planning system, a survey and report about microelectronic possibilities in the company as a whole....[now]....my job is to buy all the things for the factory, that means all machines, fitters' equipment, they [head office] give me a sheet and formula and I contact all the engineers in production."

(Respondent 5, third level down of 4, WG Organisation VIII)

"Then I have one man [fourth level down of 4] who's dealing with Germany, he's taking care of stock control, dealing with contracts, most of the time he's dealing with our area managers, if any of the agents in Germany have problems, he's the contact man."

(Respondent 1, Dutch Organisation IX)

That these arrangements pre-existed technical change was also indicated by the absence of any reference to the elimination of management tiers, all the companies reported a decrease in staff numbers but the levels of finance line management had remained intact. Whereas in Britain, several locations reported the elimination of management tiers somewhere in the company. Although flattening of managerial pyramids had most affected financial accounting departments, it had also affected management accounting functions where these activities were combined in the same location. The implication here is that responsibilities at various hierarchical levels in the German companies were structured such that elimination of tiers was not possible whereas this elimination has been possible in Britain.

However, as was contended in Chapter 7.3 (Exhibit 7e), decisions to rationalise structures generally appeared to precede technical change, any rationalisation of managerial tiers in Britain would not have been possible unless these were in any case excessive, or

without the political will to delegate downwards more substantive tasks. This was certainly the planned intention within the British Organisation IV (presented below). Following a 'profits crash' in 1980, the main board chairman's motion to simplify and compress decision making (Huxley 1984) led to the dissolution of management tiers throughout the corporate enterprise. It was clearly the enactment of the policy to change work organisation which catalysed the demand for computerised facilities and not vice versa: and the severity of the policy which illuminated the dramatic effects of computerisation. This was an exceptional British case study (see Pettigrew 1985:319-364), elsewhere the cultural heritage which underpinned hierarchical working arrangements was more transparent throughout and beyond processes of technical change (Exhibit 8d below).

For example, in Table 8.1 above, only one senior manager was personally using a computer (point f); eight of the twelve British senior managers confirmed the supply from subordinates of more detailed and sophisticated management reports (point e); in point 1, seven expressed a greater judgemental role, knowledge of the business and input to strategic decision/policy making due to the increased visibility of business performance (two of the four 'others' who also replied affirmatively to this point were actually from Organisation IV); and (point r) a further six contended that inter-functional liaison had increased (three of the nine 'others' here were from Organisation IV).

The emergent pattern underlying the profile of these responses appeared to be that senior managers depended on subordinates for the production of more reliable information of increased specificity, applied judgemental elements to evaluate indications of problems and trends etc, then effectively utilised these assessments to traject their work tasks into more indeterminate spheres, largely inter-functional senior managerial meetings which conventionally addressed policy issues of a macro or strategic nature. The principal trajectory instruments were verbal and written 'explanations' of the figures and the timely provision of an array of corrective or alternative business possibilities.

There was a good deal of evidence to suggest that large British companies have become more heavily reliant on financial analyses and, therefore, on the providers of such. This was the rationale for senior accountants' observations that 'they had become more part of the management team'. Whilst this cannot be taken as synonymous with greater decision making authority within that team, there was no evidence (except in Organisation IV) that work tasks of a strategic policy or planning/development nature were routinely delegated below the top two hierarchical levels: and only minimal evidence that any substantive judgemental responsibilities were discharged at the third level from the top (Exhibit 8d). The unfolding scenario suggested an horizontal cleavage within the industrial accountancy fraternity (cf Armstrong 1984) which technical change does not seem to be narrowing.

Exhibit 8d

British hierarchical organisation of work - a different cultural heritage

"I took over Stores and Transport last year....so we've ended up with a much slimmer senior management team....so any decision making we each put in our own expertise....we have less posts in the organisation at the lower level....when you're working to very tight financial constraints you'd probably want more authority near the top of the pyramid."

(Respondent 7, first level of 6, UK Organisation I)

"My responsibilities are 95 per cent management cost reporting and capital cost reporting and for ensuring all this accurate data is put into our computer systems....a lot of the activities that at the moment I'm responsible for will be answered by that machine, in terms of producing information for our existing database....I'm not happy about the prospect of being out of a job."

(Respondent 9, second level down of 6, UK Organisation I)

"Well computerisation has affected me very little....Again I suspect that the greater prestige which an accountant has in Britain is very helpful in getting these kinds of systems in, say compared to Germany and, again, so it's self-reinforcing."

(Respondent 1, first level of 4, UK Organisation II)

"I think the intention is to use it [PC] more frequently, to get a lot more of our reports onto it rather than hand written and typed. I don't think it's going to make things any quicker for some spreadsheets but it means we can do a lot more in terms of modelling, projections etc."

(Respondent 7, fourth level of 4, UK Organisation II)

"I do very little adding up, I do very little manipulation of figures, I get involved in the issues of the business, accountancy, tax, banking, investment evaluation, it's taken over a more advisory role, more involved in business decisions....In a region they're interested in a much lower level of person."

(Respondent 1, second level down of 5, UK Organisation III)

"Mainly to produce a set of company operating statements....we have to go through these with the finance director, so he's in the picture and knows what the position is before the group gets the reports, so he can answer the questions which may be asked."

(Respondent 5, third level down of 6, UK Organisation III)

"I'd describe my position simply as that I've been able to get involved in anything that I wish to get involved in. This isn't just about the factory, it's about the business as a whole, the shape of the business in the future."

(Respondent 4, first level of 4, UK Organisation VIII)

"We don't do an awful lot, we only balance invoices....we're having to do what we did before but the batches aren't leaving our department, we're actually putting the batches in....when you've done the same thing for ten years things can get a bit routine."

(Respondent 7, fourth level down of 4, UK Organisation VIII)

"In a job like mine you sit on all sorts of committees and review this, that and the other and end up with recommendations for the board....The judgement comes at my level and just below me."

(Respondent 2, second level down of 6, UK Organisation IX)

"A lot of reports we used to do manually but there's been no major changes, we still seem to be doing the same things....I don't think the senior management are aware of what goes on or how long it takes, there's a lot of people here who are chartered accountants and they're not as good at managing people as they are at managing figures, the supervision side means giving people encouragement, stimulating and motivating them, developing people, that's where they're lacking."

(Respondent 7, fourth level down of 6, UK Organisation IX)

Senior managerial monopoly of indeterminate work tasks had to some extent been breached in Organisation IV (Table 8.2 below). But the corporate policy which fuelled the rapid installation of a large, integrated accounting system had only limited effect on downward delegation of strategic responsibilities. The Finance Director had moved his principal sphere of involvement up to the corporate level whilst his second in command then annexed his former role of briefing senior management. Certain policy and strategic/development tasks had been delegated to the third level down (Assistant Chief Accountants) and the Product Group Accountants, whilst their structural position remained unchanged, were yoked closer to production and marketing functions through the medium of business analyses: some of this work being conducted by Management Information Accountants whose revised role also shortened the distance between finance and works/distribution functions.

UK ORGANISATION IV: MAIN CHANGES IN WORK ORGANISATION AFTER SYSTEMS IMPLEMENTATION

<u>POSITION</u>	<u>MAIN CHANGES IN WORK ORGANISATION</u>
Finance Director	Greater orientation towards strategic policy making and long term planning at corporate level,
Deputy Chief Accountant	Greater orientation towards analysis/interpretation of inter-relational performance across whole division rather than secular analysis, Replaced Finance Director in briefings to senior management,
Assistant Chief Accountants	Reduced from 4 to 2, Less orientation towards day-to-day operations, More responsibilities concerning, (1) accounting legislation, standards and policies; (2) personnel policies and qualitative analysis of long term business development,
Group and Deputy Group Leaders	Enlargement of responsibilities for different sections because of significant reduction in error-checking supervisory function and time needed for standard report compilations,
Clerical	Some task extension but basically same quality of work, keyboards replaced manual handling, Numbers of supervisors/ clerks reduced by 47,
Product Group Accountants	Reduced from 5 to 3 (one in each product group), No change in structural position, increased use of PCs to supply more ad hoc analyses to production/marketing functions, thus closer liason, Overall, enlargement of analytical work but no substantive increase in responsibilities,
Management Information Accountants	Integration of 3 sections into 1, No change in numbers but now direct access to 'works records' system and responsibility for supplying more detailed, especially ad hoc, analyses of business performance to Assistant Chief Accountant and Product Group Accountants, Thus enlargement of routine analysis tasks, Plus responsibility for monthly checking against hard-copy of monthly input to system by works/distrbn functions,
Works Accountants	Reduced from 12 to 3, One Works Accountant now enlarged responsibility for financial and cost accounting work for 4 sites because system greatly reduced manual work involved in performance analyses and cost reports, Computerised reports now directly accessible by production functions, Respondent 6 (works accountant) stated less orientation towards traditional works accounting functions, concentration on development of PC software and closer liaison with production function specially in tutorial role within process of transferring responsibility of financial monitoring operations to production personnel using personal computers and terminals,

Table 8.2

As the charts in **Appendix 2** indicate, Organisation IV in Britain exhibited the most integrated functional structure at the company, or in this case divisional, level. Yet a striking feature of this rapid re-organisation of finance work was the drive towards further operational integration at all hierarchical levels involving, broadly labelled, management accounting, whilst the same principal did not apply to financial accounting. This decoupling within finance was most visible at the Assistant Chief Accountant level, one having accrued responsibilities for accounting legislation, standards and policies, thus a movement towards more specialised, technical aspects of financial accounting. The other (respondent 4) had annexed broader based human resource responsibilities and investigations/reports of a strategic development nature embracing a spectrum of internal and external factors. Neither was this structural and operational decoupling of financial and management accounting confined to Organisation IV, what appeared to be an increasing differentiation between these two activities in Britain was reflected in the relatively high level of senior head office managers who recognised that new technology had or would decrease the dependence of management accounting on financial accounting departments (point q, Table 8.1 above).

The most salient explanatory factor underlying the widening distinction between financial and management accounting in Britain stems from inclement economic conditions (Exhibit 7b), especially since 1979, which has fuelled a recognition that the financial

dimensions embodied in statutory accounting 'are not particularly helpful in running the business'. Deriving from the same source has been the increasing sophistication of financial monitoring and controls and the emphasis on integrating a management accounting perspective within the operational functions of economic organisations. Whilst the dissemination of financial and wider commercial analyses 'in a way which the executive committee can understand' had gained hard currency at senior financial management levels, at operating sites the sharp end of financial monitoring and control had substantially elevated the degree of liaison between production functions and activities variously labelled cost, site, works, plant, factory or management accounting (point r in Table 8.1 above).

It was here, however, that the embeddedness of culturally influenced, pre-existing work arrangements was most transparent for, with the development of 'real time' cost and plant efficiency monitoring, the question of greater efficiency being derived from establishing the responsibility for monitoring costs primarily where those costs were generated had already surfaced (point t, Table 8.1 above). Indeed, as the situation in Organisation IV revealed, the process of transferring this responsibility was underway and the role of the Works Accountant had oriented strongly towards developing packaged software and instructing production personnel in basic cost accounting together with the use of new technology enabling the process to move forward. These tutorial aspects were also affirmed by three factory accountants

elsewhere (point s, Table 8.1 above) but in the particular case of Organisation IV it is possible that, in the context of British industry, the relatively advanced process of transferring cost monitoring to production had been influenced by the experience of establishing the greenfield factory site in West Germany.

Pettigrew (1985:325-328) has discussed the trading environment and strategic thinking which predicated the establishment of the plant in West Germany. Part of the strategic equation and a large portion of the capital investment was directed towards the development of a highly sophisticated process technology system. The British designers conducted the development and implementation of the system in concert with the German (and other European) nationals recruited in the early stages. Major outcomes of the design process were the manner in which the system allowed direct access of all plant monitoring, including costs, to the production function; the automated transmission of quantified operational variables to the management accounting section; and the consequent reduction in the numbers of management accounting personnel required.

"Because it's a very modern plant which was purposely built to have the most modern technology including computers, all that would have been done otherwise by clerical staff is being done by process computers, so it's not a difference between Britain and West Germany, it's a difference of the level of technology."

(Respondent 1, Finance Director, WG Organisation IV)

Whilst the German Finance Director referred to the reduction of requisite commercial personnel as a technological effect, this may have been less influenced by the straightforward trans-national contingency of technology than the surrounding inter-functional organisation of work. For, what he did not consider in making this statement was whether this reduction would have been forthcoming without the production function's direct access to and facility of operational cost monitoring. Clearly the technology is available but whether this characteristic is specifically built into the design and then incorporated into the mode of operation is a matter of social choice. And operational cost monitoring by the technical/production functions was found to be a cross-national difference, albeit in the process of dissolution in the British operating site of Organisation IV.

Additionally, although the German factory was solely a production site and firmly controlled by the British Division, as can be seen from the organisation charts in Appendix 2, within the finance function there was a clear division between the work of financial and management accountants (and incidentally these terms were imported from the British Division). The Commercial Services Manager at the operating site (respondent 2) had certainly concurred with the pre-existing difference in the persona of employees conducting these two work activities (Exhibit 6e): a cross-national difference which continued regardless of the technological sophistication characterising the site.

There were, then, a number of British developments related to the work of management accounting which were not evident in the West German subsidiaries. Firstly, there was no recognition of increased decoupling of financial and management accounting (point q, Table 8.1) because in the smaller firms all reporting was standardised and their non-autonomous nature meant that the more sophisticated developments in financial analysis were confined to the British side: in the larger, autonomous firms financial accounting and business economics has historically developed along different dimensions, the former legalistic, the latter integrated into firms' wider commercial environments (Chapters 4.3, 5.2, 5.3.2, 6.3).

Secondly, accountancy has never commanded a specialist industrial and socio-economic occupational status (Chapters 4.3, 5.2). Business economics education has been widely disseminated within the State education system (Chapter 4.2) and even where technical personnel have not formally acquired this knowledge, under the influence of cultural attitudes and philosophy, the knowledge process within firms has long ensured the dispersion of financial awareness (Chapter 5.3.2 especially Exhibits 5d and 5e). Thus, economic circumstances have hardly promoted the need for 'explanations' through liaison mechanisms (point r, Table 8.1). And in factories, financial monitoring of operational performance has never been shrouded in a cloak of mystification, rather it appears to have been integrated within a wider perspective of production control by the production function, hence the absence

of responses to points s and t in Table 8.1 above - respectively, increases in tutorial responsibilities towards production personnel and, within production functions, the annexation of financial monitoring responsibilities with the consequent redundancy of factory accountants.

The compelling logic underlying the findings presented in this section is that the effect of new technology on work organisation simply cannot be divorced from working arrangements prior to technological implementation but that these arrangements are the de facto outward manifestation of a complex set of culturally-oriented phenomena.

To the extent that industrial accountancy does not represent a recognised 'professional' or managerial group in the Federal Republic, there is a sense in which the threat of technical change as an agency of professional deskilling becomes irrelevant. The interesting imponderable, however, is whether British industrial accountants are similarly unaffected at a time when the economic Zeitgeist is clearly demanding a changing role.

8.3.2 Changing Roles

Chapter 5.2 (especially Exhibit 5b) drew attention to the differing opinions concerning accountancy in British industry and suggested that this conceptual confusion largely resulted from tensions between the historical mystification of accountancy knowledge, the fictions and anachronisms which surround British industrial accountancy and the combined processes of economic and technical change which, as the previous section demonstrated, are promoting changes in work organisation. Changes in working techniques and activities were not, however, occurring in isolation from other changes in, for example, attitudes of and towards accountants, parameters of acceptability in the processes of establishing competence and worth, and subtle changes in the structural organisation of work. Neither were these changes accelerating at a uniform pace throughout British industry.

Although all the British companies submitted to the intensification of competition in the international trading arena where technical change was seen as vital for the maintenance of a competitive edge (Chapter 7.3), the degree of attitudinal and operational or structural change was not found to be consistent with the level of technological sophistication. Changes in work organisation in the broadest sense were found to be consistent with the nature of senior managerial thinking and policies which unfolded as a result (as in Organisation IV described above). This change was not apparent in all senior managerial thinking (Exhibit 8e below).

Exhibit 8e

The unchanged face of British industrial accountancy

"How can you define what's financial and management accounting? You can't make that distinction, people try to make it but you can't do it....Whether it's management information or financial information is irrelevant."

"Unfortunately we do need to plan however much we hate it."

"I'm often accused by the Cost and Management accountants that I favour the Chartered Accountants and I have to admit that I do."

"Most non-accounting managers haven't got the first idea what a set of accounts are....36 different variances which no production manager will understand but it keeps a lot of cost accountants in a job."

"Accountants may not be able to turn their hand to manufacturing the product and they don't know very much about it at all but that's irrelevant....I would adopt exactly the same techniques running this department as I would, say, a production department."

"Yes, I think now that accountants are regarded far more as a part of the management team."

(Respondents 2 and 3, UK Organisation IX)

The changing face of British industrial accountancy

"It's called Management Accounting and Control which is a bit archaic....We face the problem now that those who look after the financial accounts are being brought into the business analysis... unless they've had the opportunity to get fairly close to the commercial realities then there's going to be a rift between those who generate the numbers and those who have to try and understand them....I think that's been a problem with all this statutory information, not seeing the business context of what they're doing."

"We're not really accountants as perhaps some people would perceive, we cover a lot of different aspects....The automation of systems, I think that management information people need should be available....Other people may become a bit more independent."

(Respondents 3 and 7, UK Organisation I)

"I never took the fifth part of my ICMA finals....the way capital expenditure ideas are put forward to me I can appreciate because I've worked in the factory, I understand the benefits from various projects, so quite often you're turning projects which feel as if they're the right thing to do to something for head office where you've got economic facts to support spending the cash."

"Where the revolution will take place as far as accountants are concerned is in PCs, to some extent if programmed properly the PC can make the non-accountant into an accountant, the non-accountant into a financial manager."

(Respondents 4 and 6, UK Organisation II)

"The accountancy profession, only the rich people could get into it, who you know not what you know... problem is in my position if someone presents me with a problem, the first thing I think about is the bookkeeping, totally negative you see... The number of accountants in our 20 is 3 or 4, everyone's into MBA now."

(Respondent 3, UK Organisation III)

-"In the management accounting area, a lot of the intelligence is built into the system which was resident in those people who occupied those positions."

"I went to college to do HND in business studies, where I really gained is from my experience on the works. Accountants are much more involved in the running of units, they work alongside the engineers, production managers and marketing people... I also run a first line supervisors course across the division, give an accountancy input into that, no better person for controlling the money than the one who's signing the chits to spend it... I'm spending a lot of time here developing new programs that once set up people can operate themselves."

(Respondents 4 and 6, UK Organisation IV)

"I've still got Cost and Management parts 3 and 2 to take and I refuse to....The need for the qualified accountant is not as wide-spread as it used to be... people who are putting the corporate figures together, taxation etc, yes, but the need for a business controller who understands accounting is far, far more prevalent, more necessary. There's a greater need to have a business understanding, understanding the attitudes of your market is far more important than having an accounting knowledge.

(Respondent 1, UK Organisation V)

"Now we're introducing more mini computers on the plants linked to all the measuring instruments and it'll go straight into that computer which is also being used as a process control instrument and the operating manager will actually be able to get the figures whereas he's not now, we'll get the control information straight from there which is being supplied to him."

(Respondent 6, UK Organisation VI)

-"Marketing accountants' brief is very strongly to become integrated within the marketing groups, anybody who seems a typical accountant wouldn't be a candidate for the job, he's an all-round individual who's able to take a fairly broad perspective, for example, we've recruited one now with an economics degree who's spent 3/4 years in the corporate Economics department."

-"The two precessors of mine in this job were not qualified accountants, there's been a dramatic move away from traditional accountants....he's a cost accountant, a rather archiac term now.. ..What I see happening is that more and more of that information will be produced directly in the production departments.

(Respondents 3 and 4, UK Organisation VIII)

The principal difference between, what appears increasingly labelled as, management information at plant level and financial or business analysis at head office level in Britain is that the former relates primarily to plant-wide production and the latter embraces production, marketing, usually distribution and a whole gamut of external business contingencies. At plant level, it was equally evident that the mystification of accounting knowledge has been an historical characteristic and that accountants' knowledge of production processes has been popularly perceived as 'irrelevant'. Whilst not aptly described a sea change, the unfolding preference towards industrially trained, as opposed to qualified chartered, accountants suggests that the trend discerned by Powell (1984) was not a passing fashion - Table 8.3 below.

ACCOUNTANCY QUALIFICATIONS OF BRITISH RESPONDENTS

<u>QUALFNS</u>	<u>OVER 40</u> <u>SEN/MID MAGT</u>	<u>UNDER 40</u> <u>SEN/MID MAGT</u>	<u>TOTAL</u>
NONE	3		3
ICAEW	11	5	16
ICMA	4	10	14
ACCA	2	3	5
<u>TOTAL</u>	<u>20</u>	<u>18</u>	<u>38</u>

Table 8.3

SEN/MID MAGT = All department/section heads regardless of hierarchical height of department

ICAEW = The Institute of Chartered Accountants in England & Wales.

ICMA = The Institute of Cost and Management Accountants.

ACCA = The Association of Certified Chartered Accountants.

Reasons for this development were quite clear. The dismantling of the 'cosy world' in which British industry operated has generated

a movement towards marshalling resources within which a priori status or prestige ascribed to chartered accountancy certification is increasingly subject to revision on the basis of appropriateness in fiercely competitive conditions. In other words, the primacy of the honorific label is being subjugated to its materiality: social status subordinated to competence in the working environment. The grounded psychology of a chartered accountant is inevitably historic, administrative, if not 'pendantic' or 'totally negative' whereas the cognitive horizons of industrially trained accountants develop with prevailing industrial circumstances.

Further, Exhibit 8e above also indicated that, under pressures of economic change facilitated by the capabilities of new technology, walls of functional ignorance are eroding to the point where the transit of financial monitoring of operational processes to those performing the processes is already underway because, under the auspices of economic realism, this is perceived as more efficient. Besides an increasingly popular notion that promoting financial awareness within production functions is likely to enhance operational cost effectiveness, capitalising on the 'real time' monitoring capabilities of new technology is forestalled unless it is extended into a real time human capability which, in the immediate term, effectively precludes spatially, but particularly, functionally distant finance personnel.

Though finance personnel in both countries contended that a 'lean, independent' controlling function will be expedient, as accountancy knowledge in Britain becomes progressively demystified, the problematic for hitherto 'arms length' accountants will be the maintenance of an advisory or consultative role unless their commonplace peripheral knowledge of production processes is somewhat expanded. This is not, of course, a scenario which has applicability in the Federal Republic where the depth of knowledge of finance personnel and their involvement in the productive processes far outstrips their British counterparts (Chapter 5.3.2 especially Exhibit 5d).

Further, if, as seems certain, increasing automation will be applied to standard financial accounting and reporting activities at plant level, beyond policing systems controls and the audit trail, which will in any case considerably alter requisite knowledge, work techniques and organisation, the ultimate question will be what sort of responsibilities could be usefully discharged by British accountants who, thus far, have remained an extremely specialised though honorifically protected occupational and managerial group. A minimal requirement may manifest as the integration of accounting activities within a wider commercial perspective. Rather than a conspicuously exclusive finance function, a loose federation embracing planning, distribution, purchasing, supply, personnel, factory/office services and general administration. Indeed, movement towards the federation of broadly commercial functions at operating sites has begun to emerge

(see Table 8.4 below, Organisations I, IV and VIII): and the decentralisation of an accounting perspective which Powell (1984) observed appears to be continuing. Any gathering momentum of these movements will almost certainly challenge the conventional intellectualism underlining the processes of establishing competence and worth within finance functions which remain highly exclusive, secular and theoretical.

At British Operating Sites and, more noticeably at, Head Offices, one, if not the, principal intention underlying structural re-organisation was increased transparency of unit business performance. This has had two major effects. On the one hand, an increased 'rift' or functional (and social) distancing between financial accounting and financial analysis/control activities. Respondents who observed 'finance/control having usurped part of financial accounting' were referring to reporting responsibilities previously discharged by financial accounting departments/sections now being undertaken within management accounting, management information or control departments especially where financial actuals could be directly downloaded from databases (as in Organisations I, IV, and VIII). A development which was envisaged also in Organisations II, III, V and VI) and may well herald an irrevocable usurpation of intellectual property rights by business analysts at the expense of financial accountants.

STRUCTURAL/OPERATIONAL DEVELOPMENTS WITHIN THE BRITISH COMPANIES

- ORG I Major 1981 re-structuring including segregation of 3 information 'streams' (corporate, financial accounting and control), Two inter linked company databases allows independence of 'control' function, "a lot of financial accounting has been mechanised so finance/control has usurped part of financial accounting and the interpretation has moved up there" (respondent 2), Extensive use of PC models now embracing wider business analysis including non-financial parameters, Operating Site; 1984 re-structuring, removal of General Administration manager, Office Services and Stores/Transport annexed to Accounts dept, Production Dept expected to take over financial monitoring of operations in future,
- ORG II 1981 re-structuring, computer dept and financial accounting transferred to OS, Operating Site, established Central Accounting Services and product-based profit centres including marketing accounting sections reporting to managing directors (non-accountants), Complex Group re-invoicing system annexed to Operations Manager,
- ORG III Appointment of Corporate Deputy Controller to systematise 'control' data requirements, Company Head Office, new Financial Analysis section, 5 staff, all MBAs, Operating Site, new Financial Analysis and Planning section, 3 staff, 2 non-accountants same grade as Chief Accountant of Finance Department,
- ORG IV Changes as described in previous section, Divisional Head Office, Product Group Accountants reporting to Product Group Manager (non-accountants), Operating Site, Accounts and Office/Factory Services annexed to Commercial Services Manager, Production Dept in process of taking over financial monitoring of operations,
- ORG VI 1984 re-structuring, Company Head Office, ongoing streamlining of marketing and control information in Management Accounting Dept, Operating Site, integration of Chemicals and Oils Accounting Depts, Production Dept expected to take over financial monitoring of operations,
- ORG VIII Re-structuring approx 1977, Company Head Office, Marketing Analysts (now not qualified accountants) integrated into Marketing Dept but reporting to General Commercial Manager, this position also responsible for Production Planning and Purchasing, Operating Site, annexed Office Services to and recently established new Management Information section in Commercial Dept, Progressive integration of plant-wide information systems and Production Dept expected to take over financial monitoring of operations

Table 8.4

On the other hand, not only did British 'management accountants' draw attention to the 'archaism' of this term but, integral to the process of more widely dissipating a financial perspective, the common currency of this function is now couched in notions of increasing de-specialisation: 'a fairly broad perspective', 'a breadth of experience', 'an all-round individual', 'business analysis and controller', 'commercial departments, managers and issues', 'understanding the market'. A further development, one which bodes ill for traditionally overspecialised accountancy, was that the point of departure in the processes of establishing 'all-round' competence/worth appeared quite basic. Rather than ad hoc alterations to job design, within firms' basic manpower planning policies, revised job/task delineations and correspondingly revised parameters of incumbents' suitability had already occurred and predicated the recruitment of MBAs and economics graduates as financial analysts, as for example in Organisations III and VIII.

Whilst this development cannot be said to have been determined by technological progress, the analytical flexibility of information technology and economic pressures have fuelled the movement towards wider commercial awareness and de-specialisation in the work of financial analysis and control functions. Clearly, since the relaxation of economic pressures and cessation of technological advance are unlikely scenarios, a technical and social division of labour within firms' commercial functions which excludes the theoretical exclusivity of accountancy may be merely a matter of time and political imperative.

8.4 THE QUESTION OF CONVERGENCE

The main thrust of the logic of industrialisation has been hypothesized as the convergence of, even ideologically and politically, disparate societies. If 'convergence' is taken to imply the independent acquisition of like characteristics, both West Germany and Britain would be expected to be exhibiting socio-economic changes which have the effect of dissolving existing cross-national societal differences. Whilst certain operational aspects (for example, introduction of computing courses within educational syllabuses, data protection regulations, use of keyboards in the workplace) have clearly been influenced by technical change cross-nationally, there was no empirical evidence to suggest any consequent changes in basic societal structures and processes. The institutionalised nature of the legal, financial, educational and, at least accountancy, occupational systems in the two countries remain distinct and dissimilar.

Within manufacturing industry, technological change could be identified with perhaps three points of 'convergence'. Firstly, the very early stages of computerisation (in the 1950s and 1960s) may have influenced a degree of centralisation of financial accounting activities, although in the cross-nationally matched autonomous companies which located head offices and operating sites geographically apart (Organisations I, VI and VIII) the level of centralisation was greater in all three German firms. Further anecdotal evidence suggested high degrees of central-

isation were commonplace in indigenous German firms because of perceived efficiency benefits in respect of the more stringent and complex statutory tax and accounting regulations. And because the job of factory employees is to produce not administer.

Secondly, the espoused underlying motivation in both countries: the imperative of technological change in maintaining a competitive edge in an increasingly competitive trading environment. Thirdly, more specifically within finance functions, technical change progressively eliminated routine manual work tasks. Now the question arises as to what other changes, associated with new technology, have arisen in West Germany which would appear to emulate British society: or vice versa?

Beyond the clear influence of British ownership on work content within the West German finance departments, there was no evidence that technical change implied any substantive independent alteration in the structural form and processes of work organisation. For example, there certainly had been no institutionalised development of a socio-economic, professional or managerial group of industrial accountants: no change in recruitment, training and career development practices. Whilst it is possible that some polarisation of qualitative responsibilities within financial accounting departments was not reported, contrary evidence suggested that legislative contingencies preclude technological substitution on the scale which might or will be possible in Britain. These contingencies may also influence the apparent

continued downward delegation of substantive judgemental responsibilities to those still vocationally educated under the auspices of the State system and, thus, whose ongoing education corresponds to unfolding industrial requirements. There was also evidence that the absence of higher level academic qualification did not preclude career progress to section or departmental leader positions in the German firms. Rather, that technical change had not diluted the value ascribed to learning by doing and competence in the job. There also appeared to be no increased blurring of the boundaries between financial accounting and business economics/controlling. These two functions continued to be perceived as having quite different purposes which required quite different persona and skills.

Business economics or controlling activities in Germany continued as an integral part of the wider and more widely dissipated commercial environment of the firm. This was mirrored in work experience profiles, particularly though not exclusively, of senior incumbents: and the continuing philosophy of this function as 'service' to the core activities of production and marketing. This, in turn reflected not only in the more intangible features such as respect but also, with greater visibility, in the knowledge and attitudinal processes which ensured a high degree of shared technical and commercial awareness and, for example, where the production function continued to discharge responsibilities for financial monitoring of operational performance and even in relationships with fiscal officialdom.

In Britain, however, signal changes in work organisation were underway which indicated *prima facie* movements towards the German model. There were signs that technical change was influencing a 'rift' between financial and management accounting. This latter, 'now more involved in the running of units', has been increasingly informed by operational programmes intended to upgrade the wider material commercial or business impact of its activities. Even to the point where qualified accountants are being replaced by actors with broader educational qualifications. In factories, there was a consensus, albeit limited, that a cross-fertilisation of technical and commercial awareness was increasingly important, perhaps as a prelude to the transfer of financial monitoring of operational processes to production functions. In the longer term these developments at head offices and operating sites conjure the possibility of a redundant management accounting function. Time and political imperative may underline a widespread initiative to suspend the theoretical bargaining power and secular knowledge of accountancy in favour of a more loosely federated commercial function similar to German practice.

In British financial accounting departments technological substitution had or will be more pronounced. Evidence from all the British companies suggested that the polarisation of work will continue until technological substitution has taken its full toll. Previously, rather than address the issue of why mistakes were made at lower hierarchical levels, it appeared that British industry had endorsed a **damage management** technique, merely

instituting tiers of intermediate supervisors and managers to 'sort out the problems' which were caused by these mistakes. Because new technology 'gets rid of the boring jobs that people don't really want to do' and, thus, the mistakes and problems, it is viewed as a panacea. Following the same rationale, intermediate hierarchical tiers are now disappearing to leave a workforce which appears now to be polarising into a select few, highly specialised and educationally qualified commanding the judgemental and indeterminate work tasks and the top and those at the bottom 'basically stuffing the computer', that is, mindlessly inputting data. These employees were actually occasionally referred to as 'a low level of person or clerk', 'wallys' or 'moron-types'.

Technical change within British management accounting has increasingly eliminated routine, manual calculation work and upgraded the inherent analytical and interpretive content of work throughout the discipline as a whole. This was the principal reason given for the requirement of 'fewer staff of higher calibre'. And the expansion of management accounting into wider commercial or business analysis appeared to be signalling an embryonic replacement of qualified accountants by actors possessing wider based and/or higher level educational qualifications. However, as in financial accounting, there was also a good deal of evidence to suggest that the more judgemental and indeterminate work tasks remain the prerogative of top management. Thus, higher analytical work content and the recruitment of economics graduates or MBAs may simply be an

extension of ~~more~~ of the same, the replacement of one type of elitist educational qualification by another without any sea change in philosophy which, in Britain, appears to place inordinate value in those who 'are' - highly theoretically qualified and/or highly positioned - rather than those who 'do' - exhibit practical working competence.

Technical change in West German firms does not appear to be changing the philosophy underlying the concert of institutionalised education and organisational practices which manifest as heavy and long term investment in employees. An integral element in this investment is a preparedness to assign substantive responsibilities according to work performance and almost regardless of paper certification. In Britain, the situation is very nearly the reverse, technical change appears to be reinforcing an unpreparedness to invest in workplace actors unless, an increasingly higher level of, theoretical competence is evidenced. And even then ascriptive substantive responsibility appears to depend less on work performance than on hierarchical position.

The research was designed to accommodate a range of cross-national similarities at the macro level, including the occupational sector or organisational function investigated: and contextual variables in cross-nationally matched pairs of companies, for example, parent ownership, type of business activity thus environment; technology which was found to be essentially the same in both countries. Yet, there were consistent cross-national differences

in management/employment practices and work organisation: differences which were more pronounced in companies similarly operating autonomously in national settings, which differences in size could not adequately explain (Chapters Five and Six), and which pre-existed and outlived technological changes (Chapters Seven and Eight).

Chapter 7.4 contended that the single most important influence on work organisation changes associated with new technology was the structure of pre-existent working arrangements: and these were influenced primarily by historically rooted, social constructions of reality and value priority. Given the macro socio-economic and political similarities between Britain and West Germany, the compelling explanation for an apparent absence of convergence, for continuing significant differences in work organisation associated with the same changes in technology, is one of cultural embeddedness.

Within this paradigm, neither the contingency perspective nor the logic of industrialisation from which it originates would appear to provide a framework for extending social understanding of industrial progress. Arguably, this is because the way in which technology is utilised, as the way in which other contingencies are embraced, are less influenced by the nature of the contingencies themselves than the factors which underlie the perception of and social choices made to accommodate such contingencies. If then, these factors are culturally oriented,

any apparent longer term convergence of disparate societies may be due primarily to the evolution of a wider coincidence of cultural factors, for a nation's culture is hardly a static phenomenon.

8.5 SUMMARY

Technical change in all but one of the sample companies had been incremental, affecting differently the activities of financial and management accounting in Britain. The progress from manual to batch processing, to on-line transaction-driven working techniques had progressively eliminated routine manual financial accounting work at the bottom of organisational hierarchies. Whilst there were other factors affecting the displacement of clerical jobs, for example, centralisation and rationalisation, technological substitution across the British sample companies appeared to have occurred on a large scale. Because it was generally conceded that lower clerical levels had been the source of 'mistakes' and 'problems' (together with data preparation functions which on-line technology is displacing), the removal of clerical labour was also perceived as the principal reason for the ongoing displacement of supervisory and management tiers which had been instituted to 'sort out problems' prior to technical change.

A complex interplay of factors appeared to contribute to a less severe sharpening of the hierarchical pyramid in the West German companies: earlier centralisation, companies were smaller, some had been utilising highly integrated financial accounting systems longer than their British counterparts, the stringent tax and accounting laws may have prevented the same scale of clerical substitution. But possibly the most important factors were (a) that much of the financial administrative activity of coding and

checking documentation for routing transactions, executed in financial accounting departments in Britain, was performed in those departments where documentation originated; (b) that the absence of a specialised accountancy function in the Federal Republic has been complemented by commercial traineeships which impart wide knowledge and practical experience, employees at non-supervisory and possibly all levels are better equipped to understand the reasons for particular tasks and less likely to make mistakes or cause problems, thus, obviating the need for proliferous supervisory and management tiers.

This preparedness to invest substantially in the human resource at lower levels was complemented by trust with higher degrees of qualitative responsibility which progressive computerisation does not seem to have diminished. German firms had not altered policies of recruiting trainees who, by nature of the training programme and the value attached to learning by doing, accumulate knowledge and responsibilities according to unfolding industrial requirements. This appeared to be in sharp contrast to British philosophy and practice. As new technology displaces clerical labour, the whole educational profile of employees has moved sharply upward: in other words, poorly qualified actors are simply not being employed. And the universal perception of work profiles within financial accounting departments was one of polarisation where actors at the bottom of hierarchies (sometimes referred to as low level, wallys or moron-types) are mindlessly inputting data via keyboards whilst top managerial actors have accrued responsib-

ilities (as departments have combined) and monopolise judgemental and indeterminate work tasks. A future problematic for qualified accountants, however, has already begun to surface, tiers of management are being eliminated which is giving rise to flattened hierarchical structures. If, as seems certain, further automation will succeed in capturing and validating transactions at source and communications/systems interfaces will automatically process data into the books of account and onto balance sheets, a declining demand or eventual elimination of qualified accountants may only be foreshadowed by the continuing close relationship between financial and management accounting and the frequent movement of actors between these two activities.

The use of new technology (micro computers and software packages) within West German business economics or controlling departments appeared to be less widespread than in management accounting departments in Britain. In the latter there was unanimous opinion that these devices were progressively eliminating routine manual calculation tasks which upgraded the analytical and interpretive content of work in the discipline as a whole: and underlined the basic perception that fewer staff of higher calibre were required. However, the use of new technology in senior management offices was virtually non-existent, allegedly because the type of tasks for which this technology is ideally suited were not conventionally conducted at this organisational level. Relatedly, senior management did not perceive technical change as providing leverage to download tasks to lower levels. From the profile of

responses it appeared that whilst actors at lower levels were required to expand output of increasingly sophisticated business analyses and reports, at higher levels this information was being utilised to traject work roles into more indeterminate spheres, especially inter-functional decision and policy making forums, which exploited greater judgemental activity and qualitative responsibilities. Only in Organisation IV was there evidence that of a limited downward delegation of indeterminate work tasks resulting from a determined corporate policy which, in turn, catalysed the introduction of a highly sophisticated, integrated accounting system plus peripheral micro computing facilities. More commonly the unfolding scenario suggested an horizontal cleavage within the industrial accountancy fraternity which technical change does not seem to be narrowing.

In some contrast, there was evidence from every West German subsidiary that policy making, strategic planning or responsibilities requiring judgemental integrity occurred to some extent at lower organisational levels. That higher degrees of delegation of qualitative responsibilities pre-existed and outlived changes in technology was suggested by overall current profiles of these responsibilities which were apparent throughout the spectrum of technological sophistication in situ: and whilst decreases in staff numbers were reported, any reference to the elimination of managerial tiers was absent with the implication that responsibilities dispersed throughout organisational hierarchies were not merely routine and substitutable by the facilities of new

technology. Whilst in Britain the elimination of managerial tiers had mostly affected financial accounting, it has also affected management accounting where these activities were combined in the same location. This implied that non-routine and non-technologically substitutable tasks were performed only at the top hierarchical levels which had not been displaced.

In British locations which supported separate financial and management accounting departments, there was evidence not only of a 'rift' or increasing decoupling of these two activities, especially where financial actuals could be automatically downloaded from databases, but also that intellectual property rights pertaining to the interpretation and reporting of financial results had been usurped by, broadly labelled, management accounting functions. In the West German companies there was no recognition of this decoupling because, in the autonomous companies, historically these two activities have been perceived as having quite different purposes requiring different skills and persona. Financial accounting serves a legalistic function whilst business economics or controlling has developed within a wider commercial environment and regarded as a service function to the core activities of marketing and, particularly, production where financial awareness has always been high: and the non-mystification of financial or economics knowledge has long enabled financial monitoring of operational processes to be performed by those within production functions.

In Britain, besides an increasingly popular notion that promoting financial awareness within production functions is likely to enhance operational cost effectiveness, capitalising on the 'real time' operational and performance monitoring capabilities of new technology is now being recognised as forestalled unless it is extended to a real time human capability. This is beginning to generate the transmission of these responsibilities to production functions which, it was suggested, will eventually render the cost accounting role redundant particularly with increased automation of reports production.

British management accounting at head office level is increasingly being underlined by structural and operational developments which are intended to integrate this activity into a wider commercial environment. To this end qualified accountants are being replaced by actors with broader based and sometimes higher level educational qualifications. Although, prima facie, these developments may appear to be emulating the German model, the concept of technical change within the industrialisation process promoting societal convergence has not been found to be reliable or valid. There was no evidence to suggest any change in institutionalised structures and processes. Rather, at least currently, technical change appears to be reinforcing cultural differences between Britain and West Germany in the single most important factor which influences work organisation prior to and beyond technical change - values and philosophies regarding human resource strategies.

Notes to Chapter Eight

1. However, not all respondents in centralised accounting departments of the larger firms alluded to large scale technological substitution of clerical labour. This was because *"the size of the corporate office and the tasks it undertakes is linked inextricably to the history, philosophy, business strategy and style of the unit"* (respondent 1, UK Corporation VIII). A key element of the business strategy in this firm, rated in the top twenty of the Times 100, was that each of the 500 constituent companies retained their own identity and autonomy, the tasks of the relatively small corporate finance department were principally concerned with tax, treasury and consolidation of group results. There was no distinct management accounting department as such but a small section providing management accounting information and a management accountant with regional responsibilities within a Co-ordination function.
2. Thus the responses from the specialist Royalties Accounting respondents from Organisation VII are excluded from Table 8.2.

PART THREE

CONCLUSIONS AND SPECULATION

CHAPTER NINE THEORETICAL PERSPECTIVES, REVIEW AND FURTHER
RESEARCH

CHAPTER TEN POSTSCRIPT

CHAPTER NINE

THEORETICAL PERSPECTIVES, REVIEW AND FURTHER RESEARCH

- 9.1 INTRODUCTION
- 9.2 CULTURE
- 9.3 THE PROFESSIONS
- 9.4 TECHNICAL CHANGE
- 9.5 SUMMARY

9.1 INTRODUCTION

At this point the reader may wish to refer to **Appendix 7** where a résumé of the research findings, discussed in Chapters Four through Eight, has been consigned. This chapter now returns to the theoretical issues raised in Chapter Two in the light of the findings presented in this thesis. Section 9.2 re-introduces the notion of culture. It is suggested that certain macro theories may be inadequate because they fail to take account of a society's cultural architecture. The section concludes by offering an advanced theoretical definition of culture which may provide a useful framework for future research.

Section 9.3 addresses the vexed theoretical issues surrounding the 'professions'. Beyond the noted indexicality of this label, it is argued that Anglo-Saxon functional analysis has not been applied in a wholly functional manner; that the critical perspective may be of partial value but ultimately becomes an unsatisfactory analytical tool; and that whilst the processual approach embraces the notion of change, this approach would perhaps be more salient if developed within a cultural perspective.

Technical change is discussed in Section 9.4. Here, those perspectives which focus on contingencies external to social choice are submitted as inadequate. The apparent differing profiles of technical change between the similarly capitalist countries of Britain and West Germany support a contention that

the cross-cultural differences cannot be overlooked. Indeed, it may be of more explanatory value to elevate the cultural divide to a position of pre-eminence. Whilst this may be taken as generating a problematic for Marxist analysis, it is not suggested that this influential perspective can be abandoned. Rather, that instead of placing a society within capitalism to explain the nature of a phenomenon such as technical change, more utility may be forthcoming by placing capitalism within the cultural context.

9.2 CULTURE

As the British study progressed clear inter-organisational differences transpired, particularly where size and types of business activity were dissimilar [1]. These differences were echoed in the Federal Republic as the fieldwork here moved forward. Nevertheless, the unfolding condition of the research, especially during the latter, assimilation stage, was the emergence of recurring inter-national differences. Some of these differences, for example, the institutional heritage and operational implications of the conceptual framework of financial accounting, could not be anticipated, much less embraced, prior to the conduct of the research (Chapter 3.7). In the last analysis however, "*the isolation of the societal effect*" (Brossard and Maurice 1976:30) was not found to be unquestionably problematic. The parameters of systematic protocol (Chapter 3.5) within the research design highlighted these fundamental national differences.

An essential element, as Jamieson (1982-83:93) suggested, was the comparison between two similarly capitalist societies since this system was found to generate pressures to move in the direction of higher technological utilisation for the same reasons (Chapter 7.3) as those contended by Baran and Sweezy (1966). Apart from the basic socio-economic and political form, other macro-structural similarities between Britain and West Germany (Chapter 3.3) brought the national comparison as close as possibly it could

have been. Further, the research strategy matched important aspects of the cross-nationally paired companies, especially type of business activity which was found to influence work task content cross-nationally (Table 5.2), and common British parenthood which was felt may, though not found to, have exerted a common corporate culture across the two countries. Taken together, these common cross-national parameters were intended to militate against the emergence of nationally-specific factors as a predominant influence on the nature of technical change and work organisation. The unfolding emergence of these factors, however, then required their identification as 'cultural' and exposition of the grounds upon which this identification was based.

A similar intention of maintaining the same cross-national research protocol also applied to the same focus on organisation function or occupational sector across both countries. But here, the absence in the Federal Republic of industrial accountants as a managerial group and, on a wider societal level, accountancy as an occupational sector exposed the indexicality of expressions and labels, such as 'accountancy', 'profession'. The national specificity of, at least, the latter expression had been recognised previously (Fores and Glover 1978), but perhaps not thoroughly examined or adequately documented in terms of why this indexicality exists and its implications at various structural levels and for operational processes. This, then, highlighted the cross-national differences between institutionalised phenomena within historical contexts. In so doing, the a priori identif-

ication of similar macro elements between Britain and West Germany became similar only in a prima facie manner for, although these institutions existed in both countries, as Chapters Four and Five documented, there were no basic cross-national operational similarities in:

- (a) the legal system,
- (b) the education system,
- (c) the accountancy occupation,
- (d) principal aspects of the financial system (Chapter 6.3).

Likewise, whilst the subject firms exhibited cross-national structural similarities (such as hierarchical ordering, functional divisionalisation, overall content of accounting work, type of computer technology), more significant were structural differences. In the Federal Republic, for example, the impact of the legal system on industrial financial accounting (Exhibit 5c) which determines the content, nature of processing and presentation of relevant data for statutory purposes; the wide functional distance between this activity and that of business economics (Exhibit 6e) which reflected the structural design of computerised systems (Chapter 7.3), in the career profiles of finance personnel (Table 6.3), the nature of their work tasks and the conduct of the relationship between commercial and technical functions (Exhibit 6f) [2]. These differences were significant for a number of reasons.

Beyond the overt similarities, the existence of cross-national structural organisational differences implies that a good deal of care must be exercised with the cross-national application of questionnaire or survey methodology: and a cautionary approach extended towards hypotheses which may be constructed as a result. There is the danger, noted in Chapter Two, that methodology relying solely on statistical analysis of survey data proceeded upon an assumption that the meanings attached to the terminology of questions were cross-nationally transferable. In this research, surveys referring to accountants would have rendered meaningless results if, as was initially thought, the label 'accountant' was assumed to be cross-nationally comparable, rather than the West German understanding of this label which represents a bookkeeper in the narrow sense.

It was also evident from the findings that although contingencies external to social choice, such as size or technology, may outwardly appear to influence or determine similar aspects of organisational design cross-nationally, the explanatory power of such variables may be relatively limited unless placed in a wider cultural context (cf Sorge 1977:57). Organisational size, for example, could not explain higher degrees of centralisation of financial accounting in the German firms which represented the most robust cross-national comparisons, much less the correspondent tendency for financial controllers at operating sites in West Germany to discharge technical responsibilities as their principal function (Chapter 5.3.2). If, for instance, size

is taken to be closely related to numbers of hierarchical levels or degrees of departmental or sectional specialisation, this ipso facto reveals little about the profile or quality of work conducted at various hierarchical points or within departments, nor why this work may differ cross-nationally (see Chapter 6.2, division of labour within industrial finance functions; Chapter 8.2 and Appendix 6, the effect of technical change on skills within financial accounting work). In fact Warner has suggested:

"....the degree to which skills are affected depends on the socio-technical tradition of the respective national-work culture, and that the manpower consequences must be seen in their societal context."

(Warner 1984b:5)

What appeared to emerge from the findings was that structural features, such as hierarchical tiers and degree of work task specialisation, could not be dissociated from wider institutional phenomena and national differences in routine employment practices. Although the sample companies exhibited considerable variability in size, the cogent overall picture emerging from the organisation charts (Appendix 2), comparisons of functional responsibilities (Tables 5.6, 5.7, 5.8 and Appendix 3) and the comparison between hierarchical organisation of work (Exhibits 8c and 8d), was that the West German firms did not institute as many finance function hierarchical levels as was the convention in Britain.

Indeed, one of the root sources of this difference appeared to stem from the statutory education system in Germany which provides the necessary grounding for the accumulation of responsibilities at lower hierarchical levels whilst many British respondents attested to the need for supervisory tiers in order to resolve the problems created 'lower down'. This, then, appears to support the notion of institutions and organisations as expressions of cultural transmission, the perspective employed by, for example, Maurice et al (1979 and 1980), Sorge (1978 and 1980): and of the importance of inter-relationships between national institutions and organisational policies (cf Lutz 1981). There is also support for the ideational perspective (taken by Hofstede for example), insofar as there were clearly attitudinal factors underlying, say, the British insistence on theoretical qualifications as indicators of ability, the German emphasis on practical working competence and the preparedness to devolve qualitative responsibilities to non-supervisory employees.

Further, utilisation of the same technology did not appear to be dissolving cross-national differences in the innovation process, (Chapter 7.4) nor in many management and employment practices (Chapter 6, educational qualifications, work experience profiles, division of labour, managerial roles and responsibilities; Chapter 8.2.2 and 8.3.1 new technology and the quality of work at different hierarchical levels). Thus, the apparent changes within British industrial accounting which may be signalling a development towards the German model (Chapter 8.3.2, increasing

decoupling of financial and management accounting, greater integration of management accounting within a wider commercial environment together with decreasing reliance on accountancy certification) were not, at least presently, reflected in other organisational practices and certainly not in societal structures.

The changes affecting British industrial accounting appeared to stem from Britain's dramatically changed political and economic relationship with the rest of the world. There was also evidence that the evolution of the business economics function in the Federal Republic had emulated Anglo-Saxon practice. Is there, then, a sense in which these developments could be deemed as integral to a deeper 'logic of industrialisation' manifesting as, say, societal reactions to the pressures of international market competition and the maintenance of living standards? Although of different profiles and over different time spans, clearly Britain and West Germany have undergone industrialisation processes up to the present day where both societies exhibit similar stages of industrialisation. And, there was a consensus across both countries that the drive towards higher utilisation of increasingly sophisticated microelectronic technology derives from an ongoing necessity to remain competitive at this stage of industrialisation.

Thus, there would seem to be elements of a 'logic of industrialisation'. But perhaps a more pertinent issue focuses on the degree to which industrialisation logic stands alone as the

explanatory umbrella under which not only cross-national similarities but also differences are explicable. Or is our understanding of the nature of industrialisation itself extended by interpreting this as a process which, although elements may happen to coincide across different societies at points in time, is essentially inflected, harnessed and orchestrated in a particular manner consistent with core societal values and norms of thinking?

Many historians have chronicled the folklore and ancien régimes of Britain and Germany, many have similarly drawn attention to differentiating characteristic features of these two countries which remain remarkably visible today. To give just one example from Simon (1967:56). Under the aegis of seventeenth century Cameralism (commonly referred to as Mercantilism in Britain), Prussian

"industry and production were encouraged and organised by The State."

And although the liberal theories of Adam Smith were read and understood, they were interpreted and put into practice by

"abolishing medieval restrictions on industry and trade and not, as in England, by restraining the interference of the modern state in a modern urban economy."

If, then, industrialisation comprises a de facto logic, why have different communities historically interpreted, embraced and manifested the process of industrialisation in the different manners which continue to constitute core features of the peculiar identity of each community? What emerges is the need for a deeper dimension which has historically and continues to exert fundamental influences on the social choices made by a society as elements within the process of industrialisation are engaged.

Social choice, or perhaps more accurately the politisation of social choice is, of course, prominent in Marxist perspectives. The cross-national institutional and organisational structural and operational differences evidenced in this research were significant for the clarification of one principal difficulty for the critical political economy perspective. Whilst Marxist analysis has harnessed the dynamics of capitalism, for example the shift from industrial to finance capital, the question arises whether theoretical developments have adequately embraced differential structural facets within capitalism which shift the real location of power (for example, a human rights constitution, a codified legal system, statutory two-tier decision making industrial structures) and, perhaps especially, operational processes which confer distinct and distinguishable characteristics on the dichotomy between labour and surplus value producing processes.

For, if the explanatory purpose of Marxist analysis is to identify the part played by economically defineable segments to the overall structural basis upon which work is organised and wealth created, then it becomes increasingly problematic for the critical political economy approach to embrace the proposition that ostensibly the same economic segments are not only differentially organised across different capitalist societies but function differently. That is, they make visibly and measurably different contributions to work organisation and wealth creation. Moreover, that these different contributions do not exist in isolation of other arrangements for ordering economic life, such as the legal, education and financial systems.

For example, evidence of this research has repeatedly suggested that the contribution of the manufacturing segment to wealth creation in West Germany is not only of a quantitatively higher order than in Britain but, without any doubt, also of a qualitatively higher order. There is no part of each society unaffected by the differential contributions perceived of and made by manufacturing industry. The German financial and banking segment exists in large part to support manufacturing industry and investment not, as in Britain, apparently primarily concerned with 'financial products'. The German education system is, on a scale unapproached in Britain, geared to prepare actors for economic contributions within industry.

The high priority of manufacturing industry affects economic and fiscal policy making - energy cost subsidies, interest and exchange rates - and overflows into the high status ascribed to industrial occupations particularly those related to production. Not only is the respect for and dignity of these occupations generally manifest in high economic rewards but also in the distribution of knowledges, competences and responsibilities which appear to have pivotal effect on the control and co-ordinative aspects of the productive process. In other words, relative to Britain, at macro and micro levels in West Germany, actors who are functionally closer to the labour process in which real use value is produced appear to contribute substantively more and exert considerably more authority within the operational processes integral to the overall structuring of work organisation and wealth creation.

Further, when operating within an interpretive paradigm, it is not adequate to rest analysis on functional labels and assume that these labels confer the same meanings across different countries. What must be taken into account is the manner in which norms of thinking influence, say, role boundaries, and relatedly, the manner in which actors perceive, interpret and execute their roles within organisational working arrangements. By way of example, the job titles of both Commercial Department heads in the two West German oil refineries would not, in themselves, have indicated the wide disparity in the manner in which they executed their roles compared to their British counterparts (see Exhibit 5d). Whilst

it could be said that, in some respects, these latter did effect co-ordination mechanisms or exert control over production at arms length through the medium of accounting products, the same cannot be said for the German respondents who had accumulated technical knowledge, who directly delivered technical responsibilities and, as in the case of respondent 11 in Organisation I, who had an entirely technical background. What this implies is that the concepts of 'control' and 'co-ordination' are problematic and cannot necessarily be cross-nationally ascribed in the same manner to functions which bear a resemblance only in terms of formal job titles.

The Marxist perspective is not, of course, solely concerned with 'function' but also with 'hierarchical position' within economic organisations. There is a synergy between these two aspects which may only be understood by making sense of underlying values and ideologies which are not necessarily similar across capitalist countries. Firstly, in terms of governance of work structuring and wealth creation, the synergy exists in the relative hierarchical status between different functions within an economic unit. In West Germany, actors functionally closest to the real use value producing process appeared to maintain a hierarchical superiority, for example, economic rewards are generally higher, knowledges, competences and responsibilities embrace those directly related to the expropriation and distribution of surplus value (such as monitoring of operational costs, liaison with fiscal authorities, top level participation in investment, salary

structure decisions etc), the possibilities of assuming the positions of highest authority are greater than for those actors who perform functions more distant from the real use value producing process, such as finance personnel.

The findings suggested that the reverse position exists in British industry, those actors who are furthest from the real use value producing process and closest to the surplus value producing process, such as finance personnel, receive highest economic rewards, monopolise the specialist knowledges, competences and responsibilities directly associated with the expropriation and distribution of surplus value and are far more likely to assume positions of highest authority: thus, hierarchically superior in terms of the governance of work structuring and wealth creation. If the critical perspective does not distinguish between different capitalist orders, it becomes difficult to explain why the synergy in the functional governance of both labour and surplus value producing processes appears widely contradictory in the two capitalist countries of Britain and West Germany

Secondly, there is related synergy within different functions of an economic unit, that is, the nature of hierarchical positioning. Carchedi (1975) argued that managerial or supervisory occupations may discharge tasks related to both the collective labourer and the global functions of capital but that those roles more closely associated with the latter will be better rewarded and afforded greater protection against proletarianisation, say deskilling.

For many reasons, including the arguments above, the function of industrial accountancy was not found to be cross-nationally comparable. This raises questions concerning the parameters which would indicate the ontological condition of those actors within the industrial accounting function who are socially and technically nearer the collective labourer or nearer the global functions of capital: for, if a specific distribution and exercise of power is peculiar to capitalism, the same parameters would be expected to exist in both capitalist countries. If, as is reasonable to assume, the lower the hierarchical position, the nearer to the collective labourer, both countries would be expected to apply the same parameters or exercise the same mechanisms which distinguish between the collective labourer and the global functions of capital. Arguably, these parameters or mechanisms relate to who enters work, the nature of the processes of establishing competence and worth, the delineation and nature of work tasks, the basis of performance evaluation and, relatedly, hierarchical progression. Moreover, a similar pattern of technological deskilling would be expected in both countries.

The research yielded much evidence which indicated little similarity in the ontological condition of actors within industrial finance functions in Britain and West Germany. In the former, entry into work proceeds almost exclusively upon the attainment of an elitist highly theoretical university degree. This is not the case in West Germany where a higher percentage of actors enter work at sixteen or eighteen and undertake a

vocational traineeship which is broad based and substantively practical. In Britain, the processes of establishing competence and worth follow a similar elitist pattern but here the certification is specialised and conferred by a specialised independent body. In large part, dependence on formal theoretical educational and professional qualifications determines the delineation and content of work. The onward evaluation of work performance is subject to this confined access to work tasks and the correspondent accumulation of knowledge and skills. Again this is not the case in West Germany, there is no specialist certification and no specialist independent body, therefore, formal theoretical educational and professional qualifications cannot determine the delineation and content of work nor limit access to the performance of work tasks. Insofar as certain work tasks are conducted at certain hierarchical levels, access to these work tasks is limited by the time it takes to acquire the experience, knowledge and skills necessary. The evaluation of work performance proceeds according to the level of ability exhibited in the technical application of learned knowledge and skills in a hierarchical formation which is not determined by criteria other than applied technical ability.

That is not to say, however, that the same delineation of work tasks and content characterised the hierarchical division of labour across the two countries. Indeed, the evidence of this research strongly suggested that those actors who might be deemed similarly near the collective labourer (clerks in Britain,

Kaufmännische Angestellte in the Federal Republic), were non-comparative labels or positions because the associated knowledge and competence was different, as was the hierarchical arrangement of work tasks and responsibilities. The evidence suggested that, whilst almost inconceivable in Britain, non-supervisory actors in West Germany were found to execute real judgemental, strategic, decision and policy making responsibilities (Table 6.4). For example, Exhibit 7c contains two statements by respondents in Organisation VIII, both were non-supervisory when (a) one was given total responsibility for research, recommendation, analysis and design of the first integrated on-line system in the company; then later the implementation, testing and the construction of a personal computer strategy for the company: (b) one was given total responsibility for the research, analysis and design of several systems across different functions, then later the construction of a microelectronics strategy for the company.

Moreover, the processes of technical change appear to be reinforcing rather than dissolving the national differences which influence the division of labour or hierarchical working arrangements (Exhibit 8c).

If, then, it makes sense to talk about the proximity of industrial accounting actors to the collective labourer or to the global functions of capital, it does not appear that the same proximity applies to structurally similar hierarchical positions across different capitalist countries. If analysts working in the

Marxian tradition were to refine the model more precisely in terms of defining those parameters which constitute proximity to the collective labourer or global functions of capital, a further application of the model cross-nationally may still render different findings in Britain and West Germany. Arguably, this is because these two societies do not operate capitalism in the same manner: the attitudes, institutions and organisations which represent expressions of cultural transmission pre-exist and influence capitalist orders rather than vice versa. This endorses the statement that:

"there can be no culture-free context of organisation."
(Sorge 1980:23)

From this position, there is a clear implication of the need to understand the manner in which actors make sense of and operate within capitalist orders. Social constructions of reality, values and ideologies may not necessarily coincide. Thus, and as the research findings indicate, making sense of social events depends largely on departing from a point which embraces indexical and contextual specificity: specificities which are, perhaps primarily, rooted in the cultural condition. That is, in the values and ideologies which create and underlie the unique dialectic between form and process of both attitudinal and institutional phenomena. But also inasmuch as the sphere of influence of major institutional phenomena extends to and no

further than national boundaries, to a large degree a coincidence of cultural and national boundaries might be expected.

Finally, whilst the operationalised definition of culture (Kroeber and Parsons 1958:553) was a useful guide in this research, I do not feel it was adequate. I cannot assume that values emerge and coalesce without prior social constructions of reality nor without aspects of intentionality which conform to a particularistic rationality at points in time. Culture is informed both by a meaningful synergy of values, ideologies etc, and by a dialectic between form and process. Thus, I suggest:

Culture is the emanation and evolution of social constructions of reality and intentionality as a meaningful synergy of values and ideologies which manifest as an unique and discernable dialectic between structural form and operational process.

9.3 THE PROFESSIONS

'A profession' is perhaps the nearest English translation of the German 'ein Beruf'. Der Beruf does not, however, apply to particular segments of the workforce such as white collar: butchers, carpenters, teachers, priests, lawyers and politicians are Berufe. Thus Beruf is a generic word, it accommodates many occupations. The common manner of enquiring about a person's job, 'was sind Sie von Beruf?' (what are you from your profession?), is indicative of a recognition that, in large part, social identity flows from the work a person does: not merely work but lifetime work. Beruf carries, therefore, connotations of long term social and economic utility, value and status across a wide spectrum of work activity. Berufserziehung is education for this lifetime work, often undertaken in Berufsschule. In Britain, the nearest equivalent is vocational training and technical schools or colleges: in many respects considered inferior to formal education and universities, in the same way as 'professional' work carries connotations of social and economic superiority. Any introductory course in marketing demonstrates the embeddedness of differential statuses (social classes A, B1, B2 etc) accorded to professional and non-professional work in Britain.

It is clear, then, that this word 'professional' is an indexical expression, its meaning is not directly transferable across national boundaries. The importance of this indexicality is, on the one hand, the reflection of differing values, ideologies and

philosophies: cultural differences which directly influence structural form and process within particular societies. Departing from this point, on the other hand, implies that the long history of academic interest in the analysis of the professions, professionalism and professionalisation (Chapter 2.3) is wholly inadequate, if not meaningless, unless it recognised at the outset that this Anglo-Saxon theory is applicable only to Anglo-Saxon countries (Fores and Glover 1978, Child et al 1983).

Chapter 4.3 pointed out that the occupation of 'Wirtschaftsprüfer' in the Federal Republic was not to be confused with 'accountancy' in Britain. Perhaps in one respect Wirtschaftsprüfer and British auditors may be perceived as having a basic parallel social function - to ensure firms' financial accounting accords with given regulations. But these two occupations are organised and operate quite differently in Germany and Britain respectively. It becomes more difficult to support a functionalist or taxonomic perspective on the professions when the various segments of the British profession simply do not exist in the Federal Republic as constituents of a recognised occupational group whose membership is controlled and legitimated by the conferral of competence from a number of recognised bodies. Additionally, Chapters 4.3 and 5.2 (and especially Exhibits 5b and 6d) demonstrated not only that this professional segmentation is less functional than fictional but also that much of work associated with financial accounting (and thus with auditing) is itself fictional because the faculty of accountancy is not anchored within an unambiguous,

intransmutable conceptual framework. The scope for subjective judgement is legion.

Moreover, respondents in this study, even those in practising offices, were clearly unconvinced that entry into and work within this profession was tantamount to a 'calling' - a moral summons to perform service work of higher, perhaps altruistic, good. Those respondents who had not 'just sort-of drifted into it' had made a conscious decision to study, qualify and work in industrial finance functions either because this offered high economic rewards and job security or because it was perceived as the fast lane to general management, or a combination of both. In any case, the high incidence of these apparently instrumental motivations was also consistent with a low incidence of what could be interpreted as professional-bureaucratic tension (for example, Hall 1968, Benson 1973). Two reports were received which suggested that senior managerial finance actors had had some difficulty or had refused to accept executive directives related either to particular courses of action or accounting practice. Nevertheless, the evidence largely concurred with, for example, Gouldner and Ritti (1966 and 1967), Schriesheim et al (1977), Child (1982), Powell (1984), to suggest that accounting professionals comfortably accepted managerial values, goals and control systems and that interests coincided since professional career aspirations often included a future management role.

Correspondingly, there was only minimal evidence to suggest 'social distinctiveness', a shared value system, common identity or particularistic 'craft consciousness' (for example, Goode 1957, Abrahamson 1957, Bensfield and Lilienfield 1973). Only two of the total sample of 62 were voluntarily involved in their institutes at a local level, two had been involved during their student days and a further two had been or were necessarily involved with the institutes' central organisation. Responses to continued membership of the institutes were very varied. Either it was important as a way of 'keeping in touch' with developments; or it was felt necessary to increase the possibility of geographical, and especially upward social, mobility; some had allowed their membership to lapse. Responses to reading institutional literature were equally varied. Some read literature regularly also as a means of 'keeping in touch' with developments; some read occasionally usually as a source of job opportunities; but most never read any of the promotional or periodical literature, it was felt to be 'boring, terrible, badly produced or of no value'. The self perceptions attached to 'being an accountant' ranged across a wide spectrum.

Thus, these findings do not appear to provide support for a functional or taxonomic professional model as a means of understanding the occupational organisation and operation of accountancy in Britain. However, in a common-sense everyday manner, accountancy, at least at present, is clearly perceived as performing a function within industry and society. So, the

principal difficulty with this paradigm may be not that it focuses on 'function' as such but that, in the case of the professions, a functional analysis has been applied in order to explain the relatively high status of these types of occupations. That is, there appears to have been an automatic assumption that higher status coincides with more important function without, of course, taking account of other societal factors which may elevate the status of certain occupations during particular eras.

This is clearly inadequate but, aside from the specific case of the professions, a wholly functional analysis could yet provide a useful framework for analysing certain defined occupations which appear to deliver a similar function across different capitalist countries and not those solely of Anglo-Saxon origin. Inevitably, this would involve analysis of both attitudinal and institutional infrastructure and mechanisms which enable these occupations to perform their function within society. It might then be possible, for example, to explicate those elements of infrastructure which might encourage the technological deskilling of ostensibly the same occupational function in one society yet not in another. In other words, a wholly functional analysis might be more useful by focusing less on the tangible aspects, say occupational status, than the more intangible features, such as the manner in which an occupational function relates to and delivers within a complex interplay of values underlying an ideological pattern.

The political ideology of capitalism has, of course, provided the analytical framework of the professions for the influential critical perspective. Here the focus turns away from the content of professional work and towards the control of work activity (for example, Johnson 1972). The research yielded a good deal of evidence to support the importance of internal control mechanisms in understanding the relatively high socio-economic status of industrial accountants in Britain. Neither were respondents unaware of this importance:

"Like all professional bodies, they're all just glorified trade unions operating restrictive practices and yet most of their members would throw up their hands in horror at the thought of joining a trade union."

(Respondent 1, UK Organisation III)

Chapters Four and Five (and especially Exhibit 6b) detailed the historical institutional development of accountancy in Britain and how, in juxtaposition with other institutional configurations (particularly the legal and educational systems), the synergy between the internal control of professional activity and wider social legitimization of professional work activity has emerged.

Representatives of each branch of the profession claimed a functional nexus between the operation of internal mechanisms of exclusivity, thus control of labour market segments, and the maintenance of occupationally defined boundaries of work activity. However, the findings suggested not only that the discipline of accountancy actually relies more heavily on fictional than

functional components but also that a functional rationale becomes highly questionable since these internal control mechanisms and occupationally defined work boundaries do not exist in West Germany. Correspondingly, within West German firms, accountancy knowledge has never been subject to mystification and monopolisation (Chapter 5.3.2, especially Exhibits 5d and 5e), yet this has been the unfolding situation in British industry. The development and continued mystification of accountancy knowledge appears to have contributed, in large part, to the development and ongoing relatively advantaged and powerful position of accountants within the social and technical division of labour in British industry and the wider economy. As Johnson (1972) argued, this may be taken as indicative of the professional condition.

If the mystification and monopolisation of professional knowledge has provided a professional power leverage it remains, however, to trace the ontological source of this leverage. In West Germany professional certification of industrial accountants does not exist apart from the exceptional attainment of Bilanzbuchalter conferred by the Chamber of Industry. Although employees might possess an university degree, the essential interface between entry into work and progression to higher managerial levels is practical ability, the application of knowledge and skills learnt by doing (Exhibit 6c). In Britain, large firms rely almost entirely on professional accountancy qualification as an indicator of practical aptitude (Exhibit 6b). Yet, this certification bears little relevance to practical, much less managerial, aptitude

(Chapter 5.2). It can really be held to represent only a theoretical measurement, but one upon which the technical and social division of labour has been constructed. Moreover, the basic artificiality of this measurement was indicated inasmuch as the conduct of judgemental or indeterminate work tasks depended on the garnering of practical knowledge and experience over time (Chapter 4.3): whereas the theoretical knowledge represented by this professional standard is codifiable and increasingly subject to computerisation (Chapter 7.3, Chapter Eight). Thus, the absence of a material functional basis for professional accountancy certification in industry implies that its importance in the construction of a technical and social division of labour derives less from a utilitarian than a political source.

Internal professional activity has, then, clear political implications which, since large British industrial enterprise appears to endorse and perpetuate this activity, may be interpreted as inherently harnessed to the location and exercise of political and economic power in society (cf Esland 1976). Critical Marxist analysts have drawn attention to two apparently opposing trends. Firstly, the absorption of industrial accountants into a managerial class (cf Ehrenreich and Ehrenreich 1977) performing the global functions of capital (Carchedi 1975) perhaps integral to the transmutation from status to occupational professionalism (Elliot 1972). Secondly, the possible reinforcement of what Johnson (1976) observed as an horizontal cleavage within

industrial accountancy, tantamount to proletarianization (Larson 1980) at certain organisational levels.

Whilst these developments may be interpreted as contrary, they are not necessarily mutually exclusive. Because, if the construction of a technical and social division of labour is harnessed to the location and exercise of political power, it is clear that certain actors over others will have closer proximity to the location and facilitated exercise of political power. And concomitantly, a central role in the social construction of a technical and social division of labour with onward implications for the distribution of indeterminate work tasks. The findings (documented in Chapter Eight) did yield some support for this perspective: technical change in financial accounting departments appears to be progressively displacing supervisory or middle management tiers. In management accounting, computerisation may be enabling the usurpation of intellectual property rights from financial accounting and increasing the analytical/interpretive content of management accounting work at middle levels but without an increase in indeterminacy. This may be taken as a reinforcement of both a functional and an horizontal cleavage, though it is more difficult to interpret in terms of proletarianization of work at middle levels unless this also includes displacement (of financial accountants) as well as deskilling.

However, the critical Marxist perspective assumes that the membership basis of the top echelons is professional ideological

complicity with and hierarchical prominence within the inequitable distribution of political power characteristic of capitalist society. Other findings of this study suggest there may be some difficulty with this assumption.

Within the accountancy profession, the chartered accountancy segment has traditionally enjoyed the highest status and certainly continues to play a major role in the reproduction of capitalist relations. Chartered accountants have also been traditionally favoured for prominent positions in industrial hierarchies. However, the trend of industrial favour towards industrially trained accountants (Powell 1984, Chapter 8.3.2, especially Table 8.3) appears to be continuing. This may support Elliot's (1972) observation of a ongoing development of rising occupational professionalism, but this study also revealed the embryonic replacement of professional industrial accountants by actors who cannot be said to belong to a recognised professional occupational group (Chapter 8.3.2, especially Table 8.4) other than being graduates or higher level university graduates. Whilst these actors did not occupy the top hierarchical echelons, it would be imprudent to rule this out as a future possibility.

The replacement of accounting actors is not tantamount to professional proletarianization or the development of a dual labour market within the profession, and clearly not a reassertion of occupational forms of work organisation. This development, however, may be interpreted as a demystification of professional

knowledge which computerisation appears to be encouraging. The evidence suggested that this has been spurred by Britain's changing fortunes in the competitive world arena. Thus, the question arises as to whether professional power is harnessed to the inequitable power distribution characteristic of capitalism per se, or to the inequitable power distribution peculiar to capitalist organisation during particular eras and within particular countries? Support for this latter perspective can surely be seen to derive from the contemporaneous existence in Britain but absence in the Federal Republic of an industrial accountants' power base.

Outside the industrial arena, 'professional' auditors exist in both Britain and West Germany. Notwithstanding the indexicality of 'professional', Chapters Four and Five detailed the non-comparative cross-national aspects of occupational organisation and operation and the fundamental differences in socio-economic roles. These differences impinge upon the societal politico-power dimension in the sense that, what may be interpreted as, the West German profession's hierarchical prominence in the inequitable distribution of power and complicity with capitalist ideology extends only as statutorily defined and regulated by the State apparatus. The occupation of auditing is, in effect, regulated by regionally-based State officers but centrally organised: and not, as in Britain, regulated and organised by bodies independent of the State.

Marx, of course, argued that the State within capitalism becomes merely the executive of the bourgeoisie whilst the State within Communism becomes the executive of the people. The philosophical and material rationales for (and critiques of) this view cannot be discussed here but there is surely a complex issue to be addressed by critical analysis of the professions which concerns the focal theme of political power. This is: whilst an ostensibly similar professional occupation exists in two capitalist countries, why should they perform different functions; why should one be self-regulating and the other centrally organised because these differences materially shift the location, possession and exercise of power away from the profession?

Herein lies a similar problematic for the processual perspective (Klegon 1978). In the case of industrial (and practising) accountants, the dynamics of professionalisation [3] do not appear relevant within the 'civic' or legalistic culture of the Federal Republic. If, however, the theoretical applicability of the processual approach is recognised as limited to the Anglo-Saxon context or as integral to these particular societies' arrangements for ordering economic life (Jamieson 1982-83), then the principal contribution of this perspective is the recognition of change within society. Klegon (1978) pointed out, though failed to develop, the notion that studies of professional organisation, operation and control need to be related to processes, other institutional mechanisms and arrangements of power in wider society. Thus, the first task is perhaps to identify the

similarities in these processes and mechanisms between different Anglo-Saxon societies as the background to understanding why change occurs and the mechanisms by which the process of change is promoted.

The conceptual foundations of the research (Chapter 3.2) noted that individual actors' subjective interpretation of reality could be understood because the process of negotiating reality is founded on a body of shared common sense knowledge and meanings but it was not assumed that this could be transferred in its entirety between different contexts. Chapter 5.2 contended that whilst the institutional context of Britain had encouraged the formation of an independent accountancy profession, that of West Germany had militated against it. It was suggested that these differences are not only historically rooted but rooted also in differential synergies of values and ideologies. The previous section defined the manifestation of culture 'as an unique and discernable dialectic between structural form and operational process' as originating from social constructions of reality and intentionality. By drawing these elements together, understanding the cultural similarities and differences between societies then depends upon identifying the point at which the social constructions of reality emanate and evolve as shared meaningful synergies of values, ideologies etc: or conversely, the point of divergence.

Between Britain and West Germany there appears to be a similar synergy of values attached to the basic form of capitalist economic organisation, where the synergy departs is concerned with the manner in which certain aspects of capitalism should be operationalised and it is this departure which signals differential manifestations in structural form and operational process.

To take an historical illustration. Emanating from the seventeenth century reality perceived by and intentions of the Hohenzollern dynasty, there is a commonsense way in which Germanic economic trading activity has not been translated into the degree of political liberalism characteristic of Anglo-Saxon countries (Simon 1967). Without natural wealth, the realisation of economic, and thus political, greatness of the Prussian monarchy depended upon expansion. The development of an undifferentiated State out of the existing fragmentation demanded central planning, organisation and administration, concerted effort and a disciplined, if not authoritarian style of rule with which political liberalism did not cohere. Thus, the formation of the first sizeable German bureaucracy and army which was to form the backbone of the unified German nation, under Bismarck, strongly attached to the value of State regulation. This remains today and has precluded the development of independently regulated occupations.

Contrastingly, at the same time American economic expansion relied on conquering vast, unexplored territories (and indigeous

populations): similarly in Britain except that these boundaries were overseas. In either case, the values of political liberalism cohered well with the pioneering and entrepreneurial spirit necessary to develop and exploit the indigenous wealth of these lands. The growth of the laissez faire economy depended on an adherence to the values of the 'invisible hand of the market', of a differentiated society, of political freedom and of minimal bureaucratic interference. The unifying discipline of State regulation would have served only to curb wealth creation. These values are very much to the fore today in British society and manifest, for example, in the successful defence of independent regulation of the accountancy profession and the financial institutions in the so-called de-regulation of the Stock Exchange in October 1986.

However, social constructions of reality and intentionality change (for example, the heightened public distrust of the City's institutions following the recent stream of insider dealing scandals and further calls to establish a statutory regulatory body, similarly Haug 1975, Ritzer 1977): eventually pre-existing values are questioned (such as the utility of mystified knowledge at a time when more widely dispersed knowledge is a necessary contingency for continued economic prosperity) until a point is reached where a new meaningful synergy of values and ideologies emerges. Then, as the processual perspective implies, new processes of professionalisation may be set in train as certain

segments begin to pursue different objectives in different manners (Strauss 1975).

Whether these emerging value synergies advance in likewise or differential fashion in similarly Anglo-Saxon countries depends, of course, on other contextual features of change. In any case, a processual perspective on the professions could be developed retrospectively, to embrace the reasons for the formation of (professional) segments at a point in time, and forwardly, perhaps to hypothesise on future segmental development. Nonetheless, there remains the problem of limited theoretical applicability for any framework which does not accommodate cultural distinctions in the concept underlying and meaning of 'profession'.

9.4 TECHNICAL CHANGE

Whilst the research did not specifically focus on the relationship between technology and organisational structure, it was clear from the observations of those respondents in a position to oversee this relationship that the single most important factor influencing the nature of technical change was the configuration of pre-existing working arrangements (Exhibit 7e).

Within finance functions, this was probably most clearly exemplified in the cross-nationally different structuring of systems interfaces between financial and management accounting departments in three of the largest organisations (I, VI and VIII) - operating autonomously in West Germany. In the British companies the systems had been designed and built to maintain the previously existent close relationship between these two accounting activities: in the West German Organisations I and VI, systems which effectively functioned in the same way were designed and built to maintain the previously existent distance between the same accounting activities. In the British Organisation VIII the systems integrated factory activities on the basis of a 'materials flow' conception with wider commercial interfaces to head office. In West Germany the less advanced systems, at that time, did not integrate finance within factory operations and head office systems still revealed a separation between the batch processing mode of financial accounting and the mostly on-line systems related to business economics (Chapter 7.3).

Here, then, the basic finance systems architecture had been modelled on the pre-existing patterns of the distribution of accounting work between different geographical sites and the relationship between financial and management accounting. These were different in companies cross-nationally. Another cross-national structural difference was embodied in the relationship between factory finance and production functions. Following the pre-existing distribution of production cost monitoring in West Germany, the plant systems in Organisations I, IV, VI (complex process technologies) and VIII had been designed to empower production functions with primary access to this data. This was not the case in the British counterparts although Organisation IV was interesting in this respect. Here all the West German systems had been designed by the British Division, essentially to German specifications of course, but future modifications to the systems interfaces within the large British system were intended to follow German practice and similarly empower the production function (Tables 8.2 and 8.4).

Additionally, even in the Organisations V and IX where all the systems were designed within the British companies, tailoring was required to accommodate the local needs of the foreign subsidiaries. This indicates that software design cannot be directly transferred across national boundaries although it was clear also that certain standardised packages, such as spreadsheets, were utilised in both countries. This, however, does not imply that the analytical work assisted by these packages

was not undertaken before their introduction. The evidence suggested that this (management accounting) work was conducted in both countries prior to the introduction of packages but, in this research of course, this work had been inaugurated by the British parent.

Nevertheless, the utilisation of standardised software does not necessarily imply that work is similarly organised around this same type of technology. As Chapter Eight discussed, there were many cross-national differences associated with the hierarchical structuring of work activity around what appeared to be ostensibly the same hardware and software technology. We shall return to this issue, here the point to be made is that whilst certain technologies may impose broad boundaries on what is perceived as the most efficient/effective manner of organising work, as say in the siting of machinery or the use of particular packages for particular purposes, technology ipso facto was found to be a secondary or ancilliary influence. This was because, post decision making, the onward design, programming and implementation of computer systems including standardised software were human constructions which appeared to be influenced largely by the same pre-conceptions embedded in working arrangements prior to technical change. Technology was made to fit organisational structure not vice versa.

This implies that technology and the nature of technical change are outward expressions of deeper seated human phenomena. The

technical implications approach (Woodward 1958, 1965), whilst not in itself unimportant, has not focused within a framework which recognises this influential human element. This, then raises questions as to the adequacy of this approach and of others which assert the overriding importance of factors outside human perception, or social constructions of reality, and social choice.

Technology is, of course, one constituent of the contingency perspective. The problematic of survey methodology which may be employed by contingency analysts has already been noted: statistical analyses of structural forms are unlikely to yield any meaningful explanations as to why those structures exist in such forms. Clearly, the management and functioning of all economic units takes place within an environment beset by multiple contingencies. However, the findings here indicated that a fruitful way forward for organisational behaviour research may be to focus, rather than on what appear to be de facto environmental contingencies, on the manner in which these contingencies are perceived and embraced, and thus manifest in the wider structural relationships and operational processes which are both reflected in and integral to the management and functioning of economic units. In other words, focusing on social constructions of reality may lead to deeper understanding of the complexities underlying the nature of social choice which is exercised in order to deal with particular contingencies in a particular manner.

Within this framework, further cross-national research may clarify why key environmental variables such as type of technology, product market, pressure for innovation, organisational size etc (Burns and Stalker 1961, Lawrence and Lorsch 1967, Hickson et al 1969) did not appear relevant to certain cross-national differences in work structuring found in this study. For example, the higher degree of centralisation of financial accounting and the technical or wider commercial responsibilities of controllers in the West German companies; the financial responsibilities of operational cost and capital expenditure monitoring of technical personnel in the West German companies; and within finance, what appeared in West Germany as a more pronounced tendency to delegate down substantive responsibilities involving judgement, liaison at higher management levels, policy making and other work activities of a strategic nature. If, as contingency theory maintains, two main organisational parameters are tasks to be executed and those responsible for task execution, then the cross-national differences in these parameters within the most robust comparative samples did not appear to be attributable to what were cross-nationally similar environmental contingencies.

Further research could usefully address the proposition that deeper seated societal phenomena pre-exist the arrival of such contingencies: in the same way as the design and implementation of new technology is primarily influenced by pre-existing work arrangements, then environmental contingencies may be harnessed according to pre-existing ways of doing things. That is not to

say that certain procedures will never be comparable across different societies but it is to say that focusing on contingencies external to social choice made according to constructions of reality may sidestep a fundamental point. The essential question may be what is the nature of factors which influence pre-existing working arrangements or ways of doing things because it may be these factors which primarily influence organisational structure and herein may lie the explanation for the manner in which environmental contingencies are harnessed.

From this stance, it may be posited that in order to explain the effects of new technology on work organisation, the phenomenon of social or, if as is reasonable to assume the interests of participating actors will not necessarily coincide, socio-political choice need be extended to include those factors which influence the nature of such choice. This would then imply (a) that certain perspectives on technical change, such as the socio-technical systems approach, may be prone to partiality; (b) that other influences on technology and work organisation, such as management philosophies and policies (Feickert 1979) or strategies (Child 1972), the structure of labour markets within which a company operates (Caves 1980), the position of the worker in the organisation's production process (Friedman 1977b), individuals' ability to manipulate the circumstances of the work situation (Berg 1980) may also not be of central importance; (c) apparently only critical analyses of technical change have attempted to expand the nature of socio-political choice into a framework which

embraces the reasons for such choice. The previous section suggested that the critical perspective may be inadequate and problematic because professional political power may be less reliant on capitalist forms of economic organisation per se than on the manner in which this basic societal form is operated by different countries. This section continues this theme in respect of technical change.

Critical analyses of technical change contend that technology is harnessed by capital as an instrument to drive forward the 'frontiers of control' over the labour process (Beynon 1973, Stone 1981). If this were so, it would be reasonable to hypothesise that technical change would have the same effects on the work organisation of those who similarly comprise the collective labourer in both British and West German industry [4]. These effects would be tantamount essentially to either displacement or deskilling, or possibly upskilling combined with intensification in order to increase expropriated surpluses: neither managerial nor so-called professional employees would necessarily be immune. Indeed much empirical work in Britain appears to have supported this theme. But as Chapter Eight recorded, between the two countries substantive differences were found in the conduct of technical change within finance functions, differences reflecting the differences which existed prior to technical change.

Almost all companies in both countries reported some displacement of employees due, in part, to technical change over time. For a

number of reasons, noted in Chapter Eight, this displacement did not appear to be as severe in the West German firms but what is perhaps more important was the profile and nature of displacement and the related aspect of deskilling. In West Germany both the largest firms (I and VI) reported a fairly recent reduction in the number of main board directors after which had followed a redistribution of responsibilities. Although this displacement was probably less related to technical change than to rationalisation, nevertheless it demonstrated a political willingness to reduce positions where it was perceived as necessary regardless of seniority. Many of the British companies had also experienced rationalisation in recent years though no reports of displacement at the highest level were received.

The pattern of replacement of manual work activity by computerised systems was very similar in both countries, that is, principally affecting the lower graded jobs. However, within an economic unit or on a higher structural level replacement may not be the same phenomenon as displacement. As far as could be ascertained, in Britain finance employees at the lowest levels were found to have accumulated only limited and highly specialised knowledge and skills which did not include wider understanding of the functional components of or contingencies affecting the business. Thus, the implementation of computer systems which effectively automated these lower level manual work tasks also displaced these employees because their whole knowledge base had been rendered obsolete. Without wider understanding of and work experience within the

firm, those who may be labelled as agents of capital exercised policies which may have appeared to them as a straightforward necessity: that is, either to reduce the quality of work to solely data inputting, or to intensify the work role with more of the same type of tasks, or release those employees whose knowledge and skills were no longer relevant. Further, in a wider context, these redundant employees are likely to experience great difficulty in finding another workplace which is able to utilise their highly specialised knowledge and skills. [5]

Chapters Four, Six and Eight drew attention to the differing scenarios experienced by what appeared to be ostensibly the same structural positions occupied by non-supervisory labour in large British and West German industrial firms - those positions most affected by computerisation. It was argued that these positions are not cross-nationally comparable because,

(a) the institutionalised education system in Germany transmits broad based general knowledge then statutorily commits firms to substantial investment in the human resource at lower levels, thus arming these employees with a depth and breadth of commercial knowledge and applicable skills which a computerised accounting system does not then displace and only with absurd counter-productivity be utilised to deskill: no evidence was found of this inherent flexibility of and investment in lower level employees occurring in Britain;

(b) the quality of knowledge and skills present in lower level German employees also appeared to promote the accumulation of

qualitative responsibilities involving the type of judgemental task elements which a computerised system cannot displace nor deskill, in Britain the judgement of clerical employees rarely appeared to be trusted;

(c) practically useful skills are highly valued in German companies and extremely unlikely to be displaced or degraded whereas in Britain what employees can 'do' appears to be of greatly inferior importance relative to what they 'are', that is, whether they possess the pieces of paper taken as the (only) appropriate qualification in accountancy;

(d) correspondingly, in the West German companies technical change was not associated with a change in policy of displacing vocationally educated employees by those with higher level university degrees. Whereas in Britain as technical change has moved forward, so the perceived appropriate educational criteria of employees in finance functions have moved upward. It could be argued that this is tantamount to displacement because those employees who previously occupied clerical and supervisory grades are simply not being considered for employment: and the evidence suggested that this is prevalent throughout large industrial firms.

It is for these reasons (though arguably ultimately related to differing cultural values) that cross-nationally differing profiles of technological displacement and deskilling appeared to emerge. **Appendix Six** indicates what seemed to be a common polarisation of work organisation within financial accounting

departments of the British firms. Indeed, there was an almost universal opinion that the primary benefit of technical change was the displacement of clerical labour because it was at this level that mistakes were made which then necessitated the problem solving abilities of tiers of supervisory and managerial incumbents. Relatedly, there was also expression that technical change is reducing the work of those lowest in organisational hierarchies to data inputting, that whole swathes of middle level problem solvers are now or will be unnecessary and that the unfolding situation is a requirement for fewer but higher calibre staff, that is qualified accountants, operating at top levels in a monitoring, policing and policy making capacity.

There were some similarities in management accounting departments, certainly fewer clerical grades although these were never as proliferous as in financial accounting. Middle grades have not and are not expected to disappear because work tasks here are primarily concerned with analysis. To the extent that new computing skills have been acquired and more of the same analytical work though possibly of a wider commercial nature is undertaken, this may be interpreted as reskilling but this is reskilling of an already highly educated segment, qualified accountants or, apparently latterly, graduates and post graduates commanding a wider commercial background. The more indeterminate work tasks, however, appeared to remain the prerogative of top levels.

The picture which emerges then, possible deskilling (although this does depend on the quality of skills exercised before computerisation) and certainly displacement at the bottom, the removal of middle level financial accounting work complemented by expansion of more qualitative analytical work in management accounting functions, the most indeterminate work remaining at the top. The unfolding scenario in West Germany appeared differently, no evidence could be found to suggest deskilling at the bottom, on the contrary, evidence from almost all the firms suggested that, whilst the many strategic decision making functions remained the prerogative of top management, as computerisation has removed much routine manual work, qualitative responsibilities have been redistributed or annexed in a manner which includes the whole hierarchical pyramid rather than confining remaining substantive work task elements to particular higher levels on the basis of elitist educational qualifications. Here, then it becomes somewhat problematic to apply an hypothesis of technological degradation of work to those who might be assumed to similarly comprise the collective labourer in both British and West German industry because any technological degradation of work which may be occurring does not appear to be a cross-nationally comparative phenomenon.

Arguably, making sense of these differing constructions of reality may not, then, rely solely on the nature of the nexus between the basic form of monopoly capitalism and the increasing subjugation of the labour process to the surplus value producing process by

the application of technology. Because, on the one hand, clerical actors who may be assumed to be part of the labour process in both countries do not similarly appear to be the object of subjugation. On the other hand, if finance functions per se within monopoly capitalism are assumed to be part of the surplus labour producing process, then it becomes problematic to apprehend the displacement and possible deskilling of clerical actors within this process in one capitalist society yet not in the other.

The principal theoretical implication arising from this rationale is that the nature of technical change may be a more complex and problematic phenomenon than a straightforward extension of pre-existing inegalitarian arrangements of power characteristic of capitalist societies. Clearly, there is a requirement for further research but a fuller, and perhaps more reliable, understanding of the nature of technical change may derive not from the distinctive characteristics of capitalist societies but the distinctive characteristics between capitalist societies: not in the de facto form of monopoly capitalism but in the underlying cultural aspects which primarily influence the structural architecture and modus operandi of monopoly capitalism.

Hence, understanding the nature of the cultural divide may offer a key to exciting future research and meaningful theoretical advance.

9.5 SUMMARY

This chapter discussed the relevance and implications of the research findings to the theoretical perspectives discussed in Chapter Two. It was suggested that culture may be of primary importance in understanding the nature of social events in society. An advanced theoretical definition of culture was presented which may provide a useful framework for future empirical research and theoretical development:

Culture is the emanation and evolution of social constructions of reality and intentionality as a meaningful synergy of values and ideologies which manifest as an unique and discernable dialectic between structural form and operational process.

Existing theories of professions and the nature of technical change within monopoly capitalism were then discussed within what may be termed a cultural perspective.

It was argued, firstly, that existing theories on the professions may be inadequate, applicable only in an Anglo-Saxon context because no recognition exists of the cultural indexicality of the labels of profession and related concepts - cultural in the sense that the construction and perpetuation of what is represented by and the meaning of these labels are underpinned by certain historically rooted values and ideologies. Nonetheless, in the

context of a cultural perspective, functionalist analyses of the professions were submitted as not representative of a wholly functional approach but what appears to have been a primary concern with socio-economic status and an automatic assumption that higher status in society coincides with more important function.

Whilst it was recognised that this viewpoint has been apprehended by the critical perspective on the professions, the question arose as to whether this structural approach could adequately address what may be a changing socio-economic and status position of British professional industrial accountants. A problematic compounded by the application of a cultural perspective insofar as this professional occupational sector is absent within the West German economy and cross-nationally differing structural organisational and operational parameters contextualise the function of auditing. Thus, whilst the mystification of professional knowledge may partly explain the advantaged position of professionals within society, the corollary that this argument could be sustained because of the inequitable distribution of power within essentially capitalist societies was not supported.

Alternatively, the processual approach has addressed the phenomenon of change within the dynamics of professionalisation. Here, since the same dynamics were not found to exist in West Germany, within a cultural perspective this not only highlighted the limited theoretical application of this approach to Anglo-

Saxon communities but also indentified the reasons for this apparent inadequacy as being an inability to explain the culturally-oriented genesis of professional segments and, relatedly, an onward projection of the nature of segmental development. It was concluded that, while this perspective could be developed retrospectively and forwardly, it may be pertinent to depart from a point which recognises the cultural distinctions in the underlying concept and meaning of profession.

Perhaps a clearer expression of the cultural perspective was found to be in the differing processes of technical change within British and West German industrial finance functions. It was evident that cross-nationally similar reasons underpinned the drive towards higher utilisation of new technology and that the single most important influence in both countries was the nature of pre-existing working arrangements. Nevertheless, the cross-national differences in the latter questioned the applicability of the technical implications and possibly contingency approaches because, it was argued that, any perspective which focuses outside the arena of social choice may be misleading. Rather, that if the parameters which influence the nature of social or socio-political choice pre-exist the arrival of technology and other contingencies, these parameters may also be helpful in explaining the manner in which such contingencies are harnessed.

The critical perspective was recognised as a framework which has attempted to integrate the nature of socio-political choice with

the underlying reasons for such choice in a manner which enables a prognosis of the effects of technical change on work organisation. The compelling findings of the research, however, suggested that cross-national differences in work organisation associated with the conduct of computerisation within British and West German industrial finance functions were informed by dissimilarities in the nature of social choice. Moreover, that this may be understood and explained in the context of influential structural forms and operational processes. Here, there appeared to be substantive differences between the similarly capitalist countries of Britain and West Germany, with the implication that a fuller or more reliable understanding of the nature of technical change may depend less on addressing the distinctive characteristics of capitalist countries per se than on the distinctive characteristics between capitalist countries: less on the de facto form of monopoly capitalism than on the underlying cultural aspects which primarily influence the structural architecture and modus operandi of monopoly capitalism.

Finally, the research findings led to a suggestion that understanding the nature of the cultural divide may offer a fruitful framework for future research and perhaps leverage for theoretical development.

Notes to Chapter Nine

1. For example, VI and VIII (both Anglo-Dutch parentage) which exhibited disparities in organisational structuring and procedures: (a) the former supported a large, central, administration-oriented bureaucracy discharging, amongst others, spot oil trading, distribution, economics, supply, finance and planning responsibilities, the latter's lean central department was highly marketing oriented; (b) disparities in accounting emphases, the former towards capital accounting, the latter's integration of marketing accountants within marketing departments; (c) reporting networks, the former's highly specialised finance function, the latter's General Commercial Manager with responsibility for production planning; management practices; (d) the former's conventional stance towards graduate recruitment and professional certification within finance, the latter's inchoate movement away from these conventions towards greater emphasis on demonstrable working competence and suspension of professional certification.
2. Other cross-national structural and related processual differences included the distribution of accounting work between finance departments at different locations and between finance and technical functions (Chapters 5.3.2 and 6.3); the division of labour within industrial finance functions (Chapter 6.2 and 8.2); the underlying attitudes and the manner in which functionally-specific knowledge is communicated, cross-fertilised and accumulated (Chapter 5.3); the means by which competence and worth are established (Chapter 6.2); the division of labour within the innovation process (Chapter 7.4); the apparent differences in the work organisation of finance personnel associated with technological change (Chapter 8).
3. This includes, for example loose amalgamations of segments pursuing different objectives (Strauss 1975), occupational strategies for achieving upward mobility (Parry and Parry 1977), maintaining occupational control over work activity (Child and Fulk 1982).
4. It could be argued that it would also be reasonable to assume that the stages of technical change would be similar in capitalist countries. Chapter 7.4 detailed cross-national differences in the processes of technical change which may also have important effects on the nature of displacement and deskilling. Because all the systems analysis, planning and design was undertaken within the user department in the West German firms, there is from the outset within this department highly visible and directly attributable accountability for any negative aspects of technical change on work organisation: and full understanding of the necessary changes in working techniques and accurate quantification of changes in staff numbers. The systems development process may take anything

from a few weeks for a small modification to a few years for a major development. The larger and more novel the development, the longer the process takes, so those developments which are likely to have the greatest impact also afford the longest time horizons during which work can be gradually re-organised and skills re-deployed. Many of the German respondents emphasised this aspect of long term planning which obviated the need for staff displacement at the time of systems implementation.

In Britain, however, in every company the initial input of the user department was limited to the definition of requirements of new or modified systems. All the analysis, design and planning were formal computer department responsibilities. Although it is now common to form steering committees and project teams comprising both user and computer department representatives, the re-design of jobs takes place at arms length and very often estimates of 'job saving' are very inaccurate because computing personnel do not have detailed knowledge of the departmental profile of work organisation. The larger the development, the more inaccurate job saving estimates are likely to be. For example, in Organisation IV (described in Chapter 8.3.1, Table 8.2) respondent 2 identified 17 jobs that would not be required post systems implementation, authority to proceed with the development depended on identifying an eighteenth job which he was unable to do but reported a 'likelihood' of 18 saved jobs. Immediately upon implementation there were 60 redundancies, 47 of which were clerical and supervisory staff from the head office central accounting department.

5. A major implication here for the automation-unemployment nexus (related to changing structures of industry and employment) is that highly specialised formal education and the apparent reluctance of British firms generally to invest in broad training of the workforce are likely to become increasingly counter-productive. It remains to be seen whether the various current training initiatives yield positive benefits in the long term.

CHAPTER TEN

POSTSCRIPT

10.1 INTRODUCTION

10.2 THE BRITISH EDUCATION SYSTEM

10.3 BRITISH ORGANISATIONAL STRUCTURING AND POLICIES

10.4 THE BRITISH PROFESSIONAL ACCOUNTANCY BODIES

10.1 INTRODUCTION

Chapter One raised a number of issues drawn largely from the content of social commentaries on new technology and the professions in Britain. Briefly, these were (a) whether it would be more enlightening to discuss what drives technology rather than to talk in terms of technology driving events; (b) the importance of social choice when the issues of employment and unemployment are uppermost in public debates; (c) changes in industrial structures and patterns of employment associated with technological progress which may manifest as the tension between record structural unemployment and skills shortages; (e) whether different types of abilities and skills are required with increasing computerisation and whether this will affect professional workstyle; (f) whether new technology will be utilised in a manner which is integral to an attack on the monopolistic and privileged position of some professional occupations.

During the process of the research it became clear that, even in the open literature, to talk in terms of technology driving events is not particularly helpful for it tends to ignore or sidestep the issue of who makes decisions about systems design and implementation and upon which criteria. Of the other issues noted above, the research was designed specifically to address some and indicate possible trends which may inform others. Thus, rather than dedicate this discussion to the issues as itemised above,

they are discussed in this chapter in terms of policy and practice conclusions drawn from investigation of three principal phenomena. These are the British State education system; organisational structuring and policies; and the British accountancy bodies: Sections 10.2 through 10.4. All, in different ways, make a contribution to the nature of technological advance in British society and to the outward manifestation of such: all could possibly make a much greater or more beneficial contribution to the complex process of assimilating new technology within society.

10.2 THE BRITISH EDUCATION SYSTEM

The process of this research has led to the compelling conclusion that fundamental aspects of current educational policies in Britain are seriously inconsistent with what is structurally, functionally and operationally necessary of such an important institution. Apportioning blame to, say successive governments, or industry, or employees themselves, or the 'national character' would not appear particularly constructive. Educational problems may be related principally to underlying anachronistic values and ideologies which have so far failed to accommodate Britain's changed fortunes in the world economic and political arenas.

Britain no longer commands monopolies in goods production nor an empire which hitherto generated wealth for the indigenous population provided a status quo was maintained in industrial management and the administration of financial services. Nevertheless, there remains an inheritance - an elitist segment of educational provision and patronage together with a mandatory, and what is sometimes perceived as a, ritualised State endurance test unrelated to the needs of industry. This appears to be producing either highly specialist theoreticians or swathes of almost illiterate labour. Although perhaps compatible with product monopolies and the imperialist nature of wealth creation, it does not appear to cohere with continued economic prosperity now dependent on the efficient/effective management of indigenous resources in a manner which must embrace manufacturing industry

and harness the potential of technological change. It is perhaps time to consider radical policy changes.

Structure

At present we have a wide disparity in what is called education and the inferior alternative vocational training managed by the Manpower Services Commission through various private sector course providers. The former has never been geared to the needs of the economy, though there are various vocational initiatives being taken in some schools but with scant contribution from representatives of economic sectors. Vocational education is poorly planned and co-ordinated and there is little external pressure on companies to invest in training, the Youth Training Scheme (and the new Job Training Scheme) may be exceptions but these schemes are not rigorously monitored for content and do not, at present, support nationally recognised standards of attainment. Relationships between educationalists and MSC administrators are seldom mutually supportive, the ethos of the former remains one of attempting to develop the pupil as an individual (though given the nature of the curricula and teaching style together with constantly declining resources, realising this aim is likely to be more illusory than realistic). MSC administrators sometimes have only the rudiments of educational understanding and operate daily on the horns of an ethical dilemma with increasing suspicions and criticisms of covert, social engineering motivations underlying the latest of vocational training schemes.

It is not inconceivable that continued separation of education and training will only serve to widen the existing gulf between the consumers of these two activities. One policy initiative might strategically organise education and training not as mutually exclusive but mutually supportive. Thus, integrated on national and local levels with a far greater contribution from industry, commerce and various other socio-economic segments than exists at present. Basic planning and co-ordination at higher levels will inevitably involve a loss of autonomy for headteachers but there is no reason why discretion cannot be increased in operational areas such as the crucially important management of resources.

Perhaps the most difficult issue to address is the element of streaming which is almost always considered as socially divisive. However, it was clear from the research findings that in terms of future (and possibly lifetime) employment opportunity, the distinction between those who have and those who do not have university degrees is extremely socially divisive. Moreover, these latter do not appear to be armed with any other skills which may provide, at least, the grounding for embarking upon a career. Streaming which effectively develops all talents may actually be more equitable in the long term. The principal problem lies perhaps in achieving the balance between broader based subject areas, say, arts and craft work, humanities and cultural, technical and scientific etc, and the degree of theoretical/practical work content. Instituting the latter at secondary education stages may involve the creation of separate schools,

although this need not, should not, be synonymous with a definitive streaming alignment. There is no reason why, on the grounds of equitable assessment techniques, such streaming should not be organised mechanisms which allow the timely transference of pupils between different streams as individual talents develop.

It is to be hoped that the increasingly degree of liaison between technical colleges and/or universities and industry/commerce will continue but, especially with increasing utilisation of new technology, the question arises as to whether it has become counter-productive to subscribe to the notion that education ends at 21. In the longer term, the whole system of university grants and funding may need to change in order to accommodate greater flexibility within tertiary education. Degree courses could be longer, offer a more leisurely rate of examination sitting which would allow a closer integration of education and work and make further and higher level education more accessible on a part-time or voluntary basis especially to those already in work and do not wish or cannot afford to sacrifice their careers.

Function

Britain's State education faculty is probably the most vital contributor to this country's future economic growth in the broadest sense. There is perhaps a need to reflect more the function of enabling pupils to think about themselves, of promoting self-confidence and social skills within the process of

developing all indigenous creative aptitudes. And in order to provide the perceptual flexibility and analytical talents which are increasingly required by utilisation of computerised systems, the curricula at elementary and secondary levels may be required to move away from intense specialisation where it presently exists towards broader based categories of studies focusing on the inter-relationships between various disciplines; where more project oriented work encourages analysis and debate; and where projects reflect real life situations with which pupils can easily identify and will involve communication outside the school environment. This will also indicate more accurately whether potential students require a more practical or intellectual input from secondary and tertiary stages of education. Clearly specialisation will be necessary at tertiary stages, although it could reasonably be hoped that pupils will have had a wide enough exposure to make better informed choices of subject at this stage than is presently possible.

Operation

Building more relevance and flexibility into curricula will involve many changes in teaching philosophy and style. Perhaps the principal change in philosophy should be a movement away from measuring how much is taught to how much is learned: thus more individual attention and continuous assessment, more holistic approaches to the planning of project work, longer lesson times and for teachers an abandonment of isolated subject areas, the development of team planning and teaching, increased liaison with

outside agencies etc. This implies more of a management and chairperson role than exists at present, for example in areas such as class sizes, timetabling, classroom organisation and arbitration. And the ratio of practical/theoretical content could also reflect teachers' personal dispositions which will involve more attention to teachers as a human resource requiring development and investment together with equitable mechanisms for ensuring accountability.

This would not seem to cohere well with the practice of life tenure within universities. If flexibility and versatility are becoming increasingly important in the workplace, there appears to be a case for promoting teaching styles which are less distanced from the needs and persona of students. The challenge for universities remains one of forging closer links with industry/commerce and ensuring that intellectual output is not confined to academia but increasingly accessible to the community for which there is a responsibility and duty to serve.

10.3 ORGANISATIONAL STRUCTURING AND POLICIES IN BRITAIN

From the exposure to large British firms, it was evident that key individuals, once having challenged entrenched assumptions upon which work is organised, may formulate policies and, in certain respects, drive dramatic change. However, as the research process unfolded, it became difficult to counter the general perception of senior British management as reactionary, routinely practising an 'arms length' approach. It may be that this inertia is a heritage stemming from former times when British industry did not actually have to sell products. Until relatively recently, Britain held virtual market monopolies, customers would buy whatever and however much could be produced. In this environment it may have been appropriate to support unwieldy administrative bureaucracies, socially divisive practices and appoint a top management not necessarily on the ground of practical competence. Social status and the correct connections may have been equally important criteria.

Although today there are discernable changes in the operating practises of, especially small and medium sized, firms', for the most part the participating Organisations in this research did not appear to be grasping the nettle of structural or technological change in ways which allowed adequate participation and the personal development of employees outside the main decision making processes. Rather than generate a widespread dynamism, senior managements appeared to regress into what I define as damage

management - techniques which might appear to influence real change but actually only address problematic symptoms leaving the cause of inefficiencies intact. 'Crisis management' is, of course, an established idiom but, in the light of this research, it appears somewhat inappropriate because the basis of what might be seen as a crisis is not actually being managed at all. Only the existing damage is being managed and concomitant techniques applied may be summed up as either 'short termism' or 'more of the same' or, at best, 'too little too late'. In the long term these techniques appear merely to accumulate more damage.

The widespread approach of instituting tiers of supervisors in order to solve the 'problems' and 'mistakes' generally attributed to clerical employees was one prominent instance of damage management. Many other examples emerged during the course of the research but here, as an illustration, I present just two, quite different, of major importance and some longitudinal input flowing from documentary sources and continued contact certain respondents.

Organisation I is a large oil/energy company, operating in an environment beset by multiple contingencies which, it could be argued should, if anything, be influencing radical changes in management practices. The corporate Chairman is a peer and the largest percentage of the top two hundred managers are either Oxbridge Classics graduates, or involved in finance, or both. Following a trading 'crisis', in 1981 the corporate management

decided to re-structure, the corporate entity was divisionalised into nine (now ten) separate 'businesses' and a complex matrix management structure was instituted. Many of the large corporate administrative departments were dissolved but replicated and expanded within each business. Those involved in 'control' contributed quite heavily to the expansion to approximately 4000 of the oil business's central administrators plus the installation of controllers 'at all levels' which the oil operating functions (refining and marketing) then had to support.

There was little evidence which suggested that even some senior managers understood or could relate to the complexities of the matrix management structure. The brief of the company head office controlling department, from which came the suggestion 'paralysis by analysis' (more of the same), is to advise top management on major decisions which accutely affect the operating functions, yet these controllers traditionally and currently are installed on the basis of paper credentials. One of these controllers mentioned that most had never 'seen the inside of a factory'. Thus, these advisors possess theoretical knowledge but no experience of making or selling oil products.

In commonsense terms, there a logical dislocation in expecting incumbents to advise on the profiles of past and future operating performances when they have such limited practical experience. Their cognitive paradigms and thus what they perceive as reality is so socially and economically distant from those who do the

operating. What happens is that this sort of damage management technique merely conduces more damage. For example, last year decisions were taken to close capacity in both major refineries together, of course, with large redundancy programmes affecting factory personnel which will also spill over to the marketing function because, clearly, products no longer being produced cannot be sold. The question which must be raised is how much more efficient the operating functions would be without such an administrative overhead to support and with policy advisors at the top who knew what they were advising about?

The Chairman of Corporation II is a peer together with two non-executive directors who since 1979 have presided over a rationalisation of immense proportions. This did not affect the composition of the board of Organisation II whose members have occupied their positions for many years with one exception, the Finance Director (respondent 2), who joined on 25 April 1983 from Corporation IV - a company headed by a man previously unknown in the City and who has also engineered a dramatic rationalisation but with a very different approach.

Organisation II was re-structured in 1981, some head office financial accounting activities and the computer department were relocated to the largest of three operating sites in Britain and each of four product families were designated as profit centres within the factory profit centre. But the top management remained aloof and detached in London, no or scant involvement in day to

day operations. Together with continuing demand for higher productivity were constant rejections of new investment proposals. Instead, the board revised budgets and instituted a series of peripheral cost cutting programmes, non replacement of natural wastage, cheaper company cars, less training though it was already minimal, etc. One effect of the disinclination to provide adequate operational resources combined with a demand for results was reflected in the computer systems. Only one sales system (contracted out to an outside software house upon a local initiative) was actually operating effectively, the rest across the whole site were hopelessly inefficient.

The Chief Executive (who had been recruited to 'sort out' the site) and the factory managers (especially production, materials planning and technical) were effectively prevented from developing their functions, their reports were ignored, they were excluded from decision making and not privy to any information concerning future plans. Since my visits to the factory I have learned that the Materials Manager left in frustration, the Chief Executive received a telex informing him of his unforwarned dismissal, the same happened to the Finance Director (from Organisation IV) who is now pursuing litigation. Then after directives were sent to the factory to reassure 'the troops', the Technical Manager was dismissed.

Platitudes in glossy company booklets which emphasise the 'need for good communication and flexibility' would sound a hollow ring

to these former employees were it not for the fact that the Chief Executive was recruited by the Finnish parent of a company making similar products. The Finns had been forced to intercept by the mismanagement of the previous British incumbents. The Chief Executive recruited the previous Materials Manager as Director and General Manager of Manufacturing, the Technical Manager as Technical Director, the Marketing Manager as Director General Marketing, and so began a haemorrhage of the most capable managers and technicians from Organisation II which has claimed 20 thus far and is continuing. The loss of specialist competence from Organisation II is irreplaceable in the short and medium term, this will almost certainly lead to market withdrawal of those products in direct competition with the Finnish parent's daughter company which has been 'turned around': reporting operating profits for the last three quarters and which has a firm commitment to the value and development of human resources. In the words of one manager 'you would not believe the difference in the openness and flexibility of corporate management style'.

Several issues emerge which British industrial management has urgently to address. Structurally, there is a straightforward principle that the more complex a management structure is, the more problematic will be management of it and management within it. Arguably, neither do large administrative bureaucracies cohere well with volatile trading and market conditions. Even quite senior managers experience difficulty in maintaining their personal identity and recognition of their contribution within

vast conglomerates. There would seem to be a case in terms of efficiency and the job satisfaction of employees for restructuring these large firms into more compact units which realise clear product definitions, markets, strategies, objectives and utilise, develop and recognise the talents of all individuals. It is almost axiomatic that effective systems design, development and implementation would be far less complex.

Corporate and company head offices would perhaps better serve industry and the economy if responsibilities located here were reduced to a minimum (such as consolidation of group results, perhaps legal/treasury expertise etc), which may be of some confederated utility but does not interfere with strategic operating policies and decisions made and executed by those who do the operating. This was, in fact, the philosophy of Corporation VIII where, it was clear at least that, the integrated factory, company and corporate administrative computer systems were operating extremely effectively.

A further related issue arises - what is the function of so many administrators? Respondents, themselves administrators, drew attention to these 'information gatherers who breed like rabbits and are just as useless in the head office which doesn't manage anything except paperclips'. It appears that much of this work has been developed because the role of operating functions has been so narrowly defined and confined to the actual making and selling processes with the result that even General Managers

sometimes do not understand basic economic or financial analysis. It is difficult to reason that a senior manager is able to deliver the general management responsibilities of a company without knowledge of the economics of the firm. There would appear to be a strong commonsense case for integrating economic and business analysis within the functions who spend and generate the cash and, thus, dispensing with a number of management accountants.

Many of the British firms' practices appeared to indicate a lack of concern for human resources: such as the keen emphasis on graduate recruitment combined with a disregard for those without university degrees; the low level of participation within and contribution to technical change of many employees; what seemed to be an undue willingness to release employees whose skills were judged to be redundant rather than invest in re-training programmes. There were many reports of reductions in training and development budgets since 1979 which certainly seems to have exacerbated skills shortages. Many firms appeared to be resolving this problem with a short term, more of the same approach, by increasing the demand for more graduates or 'poaching' already skilled people, rather than concerted effort and commitment to human resource development strategies. In this way it is likely that the managerial potential of many talented and motivated people is never considered and their talents are never developed because rounded work experience and training are considered as overheads not investments.

It is clear that Britain's structure of and expenditure on industrial training is dangerously inadequate compared to that in the Federal Republic: British industry spends on average 0.15 percent of turnover on training compared to approximately 6 percent in West Germany. This is dangerous particularly because:

"advanced technology is increasingly rapidly transferable from one country to another, with the result that competition is increasingly between workforces."

(MSC 1985:4)

Equally important is the distribution of training expenditure. It can hardly be efficient to concentrate expensive training provision within top management strata when subordinates are never given the tools to do their jobs effectively and embrace responsibilities. Although there was evidence that attitudes are changing, there still appeared to be a general reluctance to invest in the human resource at lower levels. It is not unreasonable to suggest that this is socially divisive and it was not the only example where differential practices applied to different segments of the workforce: such as status categorisations, canteens, pension rights, payment systems, access to information and, of course, participation in decision making. As Britain becomes more reliant on indigenous human resources, it must surely become increasingly difficult to defend the values, ideology and differing assumptions about human nature which underlie organisational structuring and policies.

10.4 THE BRITISH PROFESSIONAL ACCOUNTANCY BODIES

Material collected during the research suggested that these bodies have failed to embrace and take a proactive stance in response to the changing demands being placed on accountants within industry. Changes are occurring simultaneously on two different fronts. The first is clearly related to advances in information technology, thus the increasing necessity to understand the hardware, software and the principles of information management. To date these aspects appear to be inadequately covered in current professional accountancy education and certification (see for example ACCA 1986).

Secondly, accountants are becoming involved in more general commercial aspects of work. Evidence from employers suggested one of the reasons for the replacement of qualified accountants by MBAs is the perception that professional accountancy education is not sufficiently broadly commercial in orientation to service business needs.

These two aspects of change pose problems for the organisation and operation of the institutes. On the one hand, most accountants' knowledge acquired in the certification process is theoretical and rule-based. These rules are being programmed into computer software which implies that if accountants are to maintain work boundaries, there is a requirement for the technical ability to update the knowledge built into computer systems. Presently this

is almost always the prerogative of computer specialists. On the other hand, the apparent increasing need for commercially oriented personnel implies that the maintenance of demand for qualified accountants depends on the accumulation of less specialist and more generalist knowledge and skills, although the employment of MBAs or economics graduates in finance departments may continue.

Thus, these changes are moving, on the one hand towards technical application of financial expertise and, on the other hand, the integration of financial expertise within a wider commercial environment. Apart from firms' statutory financial accounting requirements which will anyway increasingly become computerised, it is difficult to see how accountants and the conferring bodies will accommodate this divergence: especially since, although the institutes may be aware of changing circumstances, they do not appear to be changing accordingly (ACCA *ibid*).

In the shorter term, some form of institutional integration might bolster the position of the profession and maintain existing occupational boundaries. However, respondents suggested the principal barrier to integration is the status posture of the Institute of Chartered Accountants. This remains an influential body in the City due, at least in part, to the socio-economic strength of practising offices and financial institutions. (There is, however, a possibility that, over the long term, the movement towards global communications and financial trading will be tantamount to a decline in this socio-economic strength.)

Relatedly, there is also the barrier of the auditing monopoly of qualified chartered accountants. This is possibly more significant because, in the longer term, it is an irresolvable functional barrier, though one which formally was a ICA strength but may latterly be a weakness.

Practising offices recruit graduates widely upon an assumption that only a select few will aspire to partnership level. Industry has provided the receptacle for older qualified accountants (mid-late twenties) who know, or are informed of, their career limitations within practice. This provides the employment opportunities for new trainee cohorts. However, the evidence of this research suggested a latter-day preference within firms away from what was perceived as increasingly inappropriately trained chartered accountants and towards those trained industry whose background is considered as more relevant. There are, of course, still many chartered accountants in top management positions but this may change during the next generation as the financial accounting function becomes more computerised and business not auditing knowledge becomes increasingly important. Industry could then cease to function as the receptacle for the surfeit within practising offices which, in turn, would then recruit fewer trainees.

Ultimately, the importance of the ICA would decline but, because the auditing function will always be necessary in some form, the operation of the institute would then become narrowly confined to

the certification of auditors and, if, as suggested by the findings, a cleavage is occurring in industry between financial and management accounting functions, this institute will then become functionally isolated.

This scenario is dependent, of course, on the ICA maintaining its current status perception and the stance against integration being sustained by the other major bodies, principally the Cost and Management Institute and Certified Association. In the shorter term, the position of both these latter would probably be strengthened by amalgamating, together with the maintenance of a distance from the ICA. But in the longer term, an extrapolation of the findings suggested that, unless changes are made to the educational content and method of accumulating knowledge which underpins certification conferred by these institutes, their future is by no means certain. This may simply be because changing industrial conditions, will also change the perception of the functional value of highly specialised qualified accountants and the institutional bodies. This functional value already appears to be questioned. Many observers have suggested that change is overdue.

As the research unfolded particularly in West Germany, it became increasingly difficult to resist the argument that this British profession, at least, is a self-protective club operating restrictive practices which are less related to industrial or the public interest than the mutual comfort of members (cf Handy

1985:128). Perhaps in some ways representative of status oriented British society which Judge Pickles observes as manifest in the legal profession and criticises as the three 'C's - complacency, conservatism and conformity.

This research has influenced a considerable change in my social construction of reality of British society. In turn this leads me to a none too optimistic outlook on Britain's future socio-economic prospects. I sincerely hope I am mistaken.

BIBLIOGRAPHY

Abel R

- 1979 The Rise of Professionalism, in British Journal of Law and Society, 6, 1: 83-98.

Abrahamson M

- 1967 The Professional in the Organisation. Chicago: Rand McNally.

Accountancy

- 1979 Setting Accountancy Standards. A Conceptual Framework. June, p75.

- 1980 Whither - or wither - the conceptual framework. April, p131.

- 1980 In the City - gloom, gloom. May, p71.

Ahiauza A

- 1981 Culture and Job Regulation. Unpublished Ph D thesis, University of Aston.

Ajiferuke M, Boddwyn J

- 1970 Culture and Other Explanatory Variables in Comparative Management Studies, in Academy of Management Journal, 13: 153-163.

Alexander A

- 1980 Whither - Or Wither - The Conceptual Framework, in Accountancy, April: 131.

Almond G, Verba S

- 1963 The Civic Culture. Princeton: University Press.

Amin R

- 1984 New Technology and Employment in Insurance, Banking and Building Societies. Aldershot: Gower with IMS.

Ardagh J

- 1987 Germany and the Germans: An Anatomy of Society Today. London: Hamish Hamilton.

Armstrong P

- 1984 Competition Between Organisational Professions and the Evolution of Management Control Systems. Paper presented to the Second Annual Aston/UMIST Labour Process Conference, University of Aston, Birmingham, 28-30 March.

- Armstrong T
1971 Job Content and Context Factors Related to Satisfaction for Different Occupational Levels, in Journal of Applied Psychology, 55, 1: 57-65.
- Aron R
1967 Eighteen Lectures on Industrial Society. London: Weidenfield and Nicholson.
- Aronowitz S
1973 The Shaping of American Working Class Consciousness. New York: Monthly Review Press.
- Association of Certified Chartered Accountants
1986 Information Technology and the Accountant. (Two volumes). London: Gower.
- Baran P, Sweezy P
1968 Monopoly Capital. Harmondsworth: Penguin.
- Barber B
1963 Some Problems in the Sociology of the Professions, in Daedalus, 92: 669-688.
- Barber L
1984 A Pro For All Seasons, in The Sunday Times, 11 November.
- Baritz L
1960 The Servants of Power. Middletown, Conn: Westlayan University Press.
- Barnes B, Law S
1976 Whatever should be done with Indexical Expressions, in Theory and Society, 3, 2: 223-237.
- Barron I, Curnow R
1979 The Future With Microelectronics. London: Francis Pinter.
- Batholomew E
1979 Harmonisation of Financial Reporting in the EEC, in Accountancy, October.
- Bechhofer F
1973 The Relationship between Technology and Shopfloor Behaviour: A Less Heated Look at the Controversy, in D Edge and J Wolfe (eds) Meaning and Control: Essays in Social Aspects of Science and Technology. London: Tavistock, p121-142.
- Becker H
1971 The Nature of a Profession in Sociological Work: Method and Substance. London: Allen Lane.

- Bell D
1973 The Coming of Post-Industrial Society. New York: Basic Books.
- Bell R
1972 Changing Technology and Manpower Requirements in the Engineering Industry. Sussex: University Press.
- Ben-David J
1964 Professions in the Class System of Present-day Societies, in Current Sociology, 12, 3: 253-298.
- Bennis W, Slater P
1969 The Temporary Society. New York: Harper Row.
- Bensfield J, Lilienfield R
1973 Craft Consciousness. New York: Wiley.
- Benson J
1973 The Analysis of Bureaucratic-Professional Conflict: Functional Versus Dialectical Approaches, in Sociological Quarterly, 14: 376-394.
- Berg M
1980 The Machinery Question and the Making of Political Economy 1815-1848. Cambridge: University Press.
- Bessant J, Grunt M
1985 Management and Manufacturing Innovation in the United Kingdom and West Germany. Farnborough: Gower.
- Beynon H
1973 Working for Ford. Harmondsworth: Penguin.
- Beynon H, Blackburn R
1972 Perceptions at Work: Variations Within a Factory. Cambridge: University Press.
- Bierstedt R.
1970 The Social Order. New York: McGraw-Hill.
- Bird J
1985 Big, Blue and Booming, in Sunday Times, 17, February 1985:65.
- Bird J, Huxley J
1985 The Silicon Crisis, in Sunday Times, 9 June, p65.
- Blauner R
1964 Alienation and Freedom. The Factory Worker in His Industry. Chicago: University Press.

- Bloor D
1974 Popper's Mystification of Objective Knowledge, in Science Series, 4: 65-76.
- 1976 Knowledge and Social Imagery. London: Routledge and Kegan Paul.
- Böhme H
1978 An Introduction to the Social and Economic History of Germany. (Translated by W Lee). Oxford: Basil Blackwell.
- Bolweg J
1976 Job Design and Industrial Democracy. Leiden: Martinus Nijhoff.
- Bourdieu P, Boltanski L
1978 Changes in Social Structure and Changes in the Demand for Education, in S Giner and M Archer (eds) Contemporary Europe. London: Routledge and Kegan Paul.
- Bourdieu P, Passeron C
1977 Reproduction in Education, Society and Culture. London: Sage.
- Bower J
1970 Managing The Resource Allocation Process. Boston: Harvard Business School.
- Braun E
1978 The Dilemma of Automated Production. Unpublished Paper, Technology Policy Unit, University of Aston Management Centre, Birmingham.
- Braverman H
1974 Labour and Monopoly Capital: The Degredation of Work in the Twentieth Century. New York: Monthly Review Press.
- Brecht A
1953 Personnel Management, in E H Litchfield (ed) Governing Postwar Germany. Ithaca: Cornell University Press, p264-294.
- Bright J
1958 Automation and Management. Boston: Harvard Business School.
- Briloff A
1977/78 How Accountants Can Recover Their Balance, in Business and Society Review, 24: 64-68.
- Briston R, Perks R
1977 The External Auditor: His Role and Cost to Society, in Accountancy, November: 48-52.

- Brossard M, Maurice M
 1976 Is There a Universal Model of Organisation Structure, in International Studies of Management and Organisation, 6: 11-45.
- Buchanan D
 1985 Principles and Practice in Work Design: Current Trends, Future Prospects. University of Glasgow, Department of Management Studies, Working Paper Series No 1, June.
- Buchanan D
 1986 Canned Cycles and Dancing Tools: Who's Really In Control of Computer Aided Machining? University of Glasgow, Department of Management Studies, Working Paper Series No 1, March.
- Buchanan D, Bessant J
 1985 Failure, Uncertainty and Control: The Role of Operators in a Computer Integrated Production System, in Journal of Management Studies, (October) No 22.
- Buchanan D, Boddy D
 1982 Advanced Technology and the Quality of Working Life: The Effects of Word Processing on Video Typists, in Journal of Occupational Psychology, 55, 1: 1-11.
- Buchanan D, Huczynski A
 1985 Organisational Behaviour: An Introductory Text. London: Prentice-Hall.
- Budde A, Child J, Francis A, Kieser A
 1982 Corporate Goals, Managerial Objectives and Organisational Structure in British and West German Companies, in Organisational Studies, 3: 1-32.
- Burack E
 1967 Industrial Management in Advanced Production Systems: Some Theoretical Concepts and Empirical Findings, in Administrative Science Quarterly, 12: 479-500.
- Burchell S, Chubb C, Hopwood A, Hughes J
 1980 The Roles of Accounting in Organisations and Society, in Accounting, Organisations and Society, 5: 5-27.
- Burnham J
 1945 The Managerial Revolution. Harmondsworth: Penguin.
- Burrell G, Morgan G
 1979 Sociological Paradigms in Organisational Analysis. London: Heinemann.

- Butteriss M
1975 The Quality of Working Life: The Expanded International Scene. Work Research Unit Paper Number 5, London: Department of Employment.
- Calvert M
1967 The Mechanical Engineer in America 1840-1910: Professional Cultures and Conflict. Baltimore: John Hopkins.
- Carchedi G
1975 On the Economic Identification of the New Middle Class, in Economy and Society, 4: 1-86.
- Carey A
1981 The Benefits of Following New Paths in Training, in Accountancy, August.
- Carr-Sanders A, Wilson P
1964 The Professions. London: Frank Cass and Company Ltd.
- Caves R
1980 Industrial Organisation, Corporate Strategy and Structure, in Journal of Economic Literature, XVIII: 64-92.
- 1977 On the Economic Identification of Social Classes. London: Routledge, Direct Editions.
- Chandler A
1962 Strategy and Structure. Cambridge, Mass: Harvard Business School.
- Cherns A
1976 The Principles of Socio-technical Systems Design, in Human Relations, 29: 783-792.
- Cherns A, Davis L
1975 The Quality of Working Life, Volume 1. New York: Free Press.
- Child J
1972 Organisation Structure, Environment and Performance: The Role of Strategic Choice, in Sociology, 1, 6: 1-22.
- 1975 Technical Progress, in B Barrett et al (eds) Industrial Relations and the Wider Society. London: Collier Macmillan, p144-162.
- 1977 Organisation: A Guide to Problems and Practice. London: Harper Row.
- 1978 The Myth at Lordstown, in Management Today, 177, 183: 80-83.

- 1981 Culture, Contingency and Capitalism in the Cross-National Study of Organisations, in L Cummings and B Staw (eds) Research in Organisational Behavior Volume 3. Greenwich, Conn: JAI Press, p303-356.
- 1982 Professionals in the Corporate World: Values, Interests and Control, in D Dunkerly and G Salamon (eds) The International Yearbook of Organisation Studies 1981. London: Routledge and Kegan Paul, p212-241.
- 1986a Technology and Work: An Outline of Theory and Research in the Western Social Sciences, in P Grootings (ed) Technology and Work: East-West Comparison. London: Croom Helm, p7-65.
- 1986b New Technology and the Service Class, in K Purcell et al (eds) The Changing Experience of Employment. London: Macmillan.
- Child J, Fores M, Glover I, Lawrence P
1983 A Price to Pay? Professionalism and Work Organisation in Britain and West Germany, in Sociology, 17, 1: 63-78.
- Child J, Fulk J
1982 Maintenance of Occupational Control: The Case of the Professions, in Work and Occupations, 9, 2: 155-192.
- Child J, Ganter H-D, Kieser A
1987 Technical Innovation and Organisational Conservatism, in J M Pennings and A Buitendam (eds) New Technology as Organisational Innovation. Cambridge, Mass: Ballinger.
- Child J, Kieser A
1977 Contrasts in British and West German Management Practice: Are Recipes for Success Culture Bound? University of Aston Management Centre Working Paper Series Number 75.
- 1979 Organisational and Managerial Roles in British and West German Companies: An Examination of the Culture-Free Thesis, in C Lammers and D Hickson (eds) Organisations Alike and Unlike. London: Sage.
- Child J, Mansfield R
1973 Technology, Size and Organisational Structure, in Sociology, 6: 369-393.
- Child J, Partridge B
1982 Lost Managers: Supervisors and Industry and Society. Cambridge: University Press.

- Child J, Schreisheim J
 1979 Changes in the Social Position of Professional Occupations. University of Aston Working Paper, Series Number 155.
- Child J, Tayeb M
 1980 Theoretical Perspectives in Cross-National Organisational Research, in International Studies of Management and Organisation. 12, 4: 23-70.
- Cicourel A
 1973 Cognitive Sociology. Harmondsworth: Penguin Books.
- Clawson D
 1980 Bureaucracy and the Labour Process. New York: Monthly Review Press.
- Clegg S, Dunkerly D
 1980 Organisation, Class and Capital. London: Routledge and Kegan Paul.
- Collins R
 1979 The Credential Society. New York: Academic Press.
- Comstock D, Scott W
 1977 Technology and the Structure of Subunits: Distinguishing Individual and Workgroup Effects, in Administrative Science Quarterly, 22: 177-202.
- Conradt D
 1978 The German Polity. New York: Longman.
- Cooley M
 1976 Contradictions in Science and Technology in the Production Process, in H Rose and S Rose (eds) The Political Economy of Science. London: Macmillan, p72-95.
- 1977 Taylor in the Office, in R N Ottaway (ed) Humanising the Workplace. London: Croom Helm, p65-77.
- 1981 Architect or Bee? The Human/Technology Relationship. Slough: Langley Technical Services.
- Cooper D, Lowe T, Puxty T, Willmott H
 1985 The Regulation of Social and Economic Relations in Advanced Capitalist Societies: Towards a Conceptual Framework for a Cross National Study of the Control of Accounting Policy and Practice. Paper received from Dr H Willmott, Management Centre (Nelson Building), University of Aston in Birmingham.

- Cornwall J
1977 Modern Capitalism - Its Growth and Transformation.
Oxford: Martin Robertson.
- Cotgrove S, Dunham J, Vamplew C
1971 The Nylon Spinners. London: George Allen and Unwin.
- Coulter J
1971 Decontextualised Meanings: Current Approach to
Vestehende Investigations, in Sociological Review, III:
301-323.
- Council for Science and Society
1981 New Technology: Society, Employment and Skill. London:
CSS.
- Crawley A
1973 The Rise of Western Germany 1945-1972 London: Collins
- Crompton R, Reid S
1982 The Deskillling of Clerical Work, in S Wood (ed) The
Degredation of Work? London: Hutchinson, Chapter 9.
- Crossman E
1960 Automation and Skill. London: HMSO.
- Crum R, Gudgin G
1976 Non-manufacturing Activities in the UK Manufacturing
Industry. Report to the Department of Industry and the
Commission of the EEC. Norwich: University of East
Anglia.
- Cummings T, Molloy E
1977 Improving Productivity and the Quality of Working Life.
New York: Free Press.
- Dalton M
1948 The Industrial Rate Buster: A Characterisation in
Applied Anthropology, 7: 5-18.
- Davis L
1966 Job Satisfaction Research: The Post-Industrial View, in
Industrial Relations, 10: 176-193.
- Davis L, Taylor J (eds)
1972 Design of Jobs. Harmondsworth: Penguin.
- Davis L, Taylor J
1976 Technology, Organisation and Job Structure, in R Dubin
(ed) Handbook of Work Organisation and Society.
Chicago: Rand McNally, Chapter 9.

- Davis K, Moore W
 1945 Some Principles of Stratification, in American Sociological Review, 10.
- Davis R
 1984 No Soft Soap at Unilever, in Sunday Times, 20 May, p57.
- De Jonquieres G
 1985 Confounding Orwell's Predictions, in Financial Times, 2 January.
- Delmotte Y
 1976 in A B Cherns and L E Davis (eds) op cit.
- Derber C, Schwartz M
 1980 Professionals as Workers. Unpublished research proposal, Appendix A, review of the literature. Mass: Tufts University.
- Dickson K
 1978 The Impact of Industrial Automation: A Case Study. Unpublished M Sc Thesis, Technology Policy Unit, University of Aston Management Centre, Birmingham.
- Dixon M
 1984 Industry Faces a Big Challenge, Computer Software Survey, in Financial Times, 3 December, pVIII.
- Doeringer P, Piore M
 1971 Internal Labour Markets and Manpower Analysis. Lexington, Mass: Heath.
- Donaldson L
 1976 Woodward, Technology, Organisational Structure and Performance - A Critique of the Universal Generalisation, in Journal of Management Studies, 13 October, p255-273.
- Douglas J
 1971 Understanding Everyday Life: Towards a Reconstruction of Sociological Knowledge. London: Routledge and Kegan Paul.
- Dunlop J
 1964 Review of Turner: Trade Union Growth, Structure and Policy, in British Journal of Industrial Relations, 14, 2: 287-289.
- Ehrenreich B, Ehrenreich J
 1977 The Professional-Managerial Class, in Radical America 11: 7-13.

- Eldridge A
 1971 Weber's Approach to the Study of Industrial Workers, in A Sahay (ed) Max Weber and Modern Sociology. London: Routledge and Kegan Paul.
- Elgar T
 1979 Valorisation and Deskillling, in Capital and Class, 7: 58-99.
- Elliot P
 1972 The Sociology of the Professions. London: Macmillan.
 1973 Professional Ideology and Social Situation, reproduced in G Esland, G Salamon and M Speakman (eds) People and Work. (1975) Edinburgh: Holmes McDougall (Open University Press), p275-286.
- Emery F, Thorsrud E
 1969 Form, Content and Industrial Democracy. London: Croom Helm.
- Esland G
 1976 Professions and Professionalism, in B Kansara and J Korner (eds) Politics of Work and Occupation. Milton Keynes: Open University Press.
- Evans J
 1979 The Impact of Microelectronics on Employment in Western Europe in the 1980s. Brussels: European Trade Union Institute.
- Feickert D
 1978 Of Men and Minos, in Computing Europe, 22 November, p31.
- Financial Times Surveys
 1984 Computing Software, 3 December
 1985 Electronic Information Services, 4 April
 1985 Professional Personal Computers, 15 April.
 1985 Software Packages for Business, 1 May.
 1985 UK Banking, 7 October.
 1986 Big Bang: City Revolution, 27 October.
- Fitter M
 1982 in J E Kelly and C W Clegg op cit, Chapter 7.

- Flint D
1980 The Impact of Change on the Accountancy Profession. Scotland: The Institute of Chartered Accountants in Scotland.
- Fores M
1981 The Myth of the British Industrial Revolution, in History, 66: 181-198.
- Fores M, Glover I
1978 The British Disease: Professionalism, in The Times Higher Education Supplement, 24 February.
- Freeman C
1974 The Economics of Industrial Innovation. Harmondsworth: Penguin.
- Freidson E
1973 Professions and the Occupational Principle, in E Freidson (ed) The Professions and Their Prospects. Beverly Hills, CA: Sage.
- 1977 The Futures of Professionalization, in M Stacey et al (eds) Health and the Division of Labour. London: Croom Helm.
- 1979 The Theory of the Professions: The State of the Art. Unpublished Manuscript, New York University, July.
- Friedman A
1977a Responsible Autonomy Versus Direct Control over the Labour Process, in Capital and Class, 1: 43-57.
- 1977b Industry and Labour. London: Macmillan.
- Fielding A, Portwood D
1980 Professions and the State: Towards a Typology of Bureaucratic Professions, in Sociological Review, 28, 1: 23-53.
- Fox A
1974a Beyond Contract: Work, Power and Trust Relations. London: Faber.
- 1974b Man Mismanagement. London: Hutchinson.
- Galbraith J K
1967 The New Industrial State. London: Hamish Hamilton.
- Galbraith J R
1973 Designing Complex Organisations. Mass: Addison-Wesley.

- Gallie D
1978 In Search of the New Working Class. Cambridge: University Press.
- Garfinkel H
1967 Studies in Ethnomethodology. New Jersey: Prentice Hall.
- Geertz C
1973 The Interpretation of Culture. New York: Basic Books.
- Geshuny J
1978 After Industrial Society. London: Macmillan.
- Giddens A
1976 New Rules of Sociological Method. London: Hutchinson.

1973 The Class Structure of Advanced Societies. London: Hutchinson.
- Gleeson A
1979 A Tougher Road to the Top for Accountants, in The Times, 3 December
- Glover I
1986 The Changing Situation of Britain's Engineers in Britain's Industry Year 1986. Published by VDI (West German Engineering Institute), Nachrichten, 14 March, p13.
- Glover I, Kelly M, Roslender R
1986 The Coming Proletarianisation of the British Accountant. Paper presented to the Fourth Joint Aston/UMIST Labour Process Conference, University of Aston, Birmingham, April.
- Glover I, Martin G
1986 Managerial Work: An Empirical and Cultural Contradiction in Terms? Department of Business Studies, Dundee College of Technology, unpublished paper, March.
- Goddard J, Thwaites A
1980 Technological Change and the Inner City. London: Social Science Research Council.
- Goldthorpe J, Lockwood D, Bechhofer F, Platt J
1968 The Affluent Worker: Industrial Attitudes and Behaviour. Cambridge: University Press.
- Goode W
1957 Community Within a Community: The Professions, in American Sociological Review, 22: 248-257.

- Goodenough W
 1961 A Comment on Cultural Evolution, in Deadalus, 90: 521-528.
- Gooding C
 1984a Solutions Are a Long Time Coming, Computer Software Survey, in Financial Times, 3 December, pVIII.
 1984b A Mandatory Buzzword for Computing, Computer Software Survey, in Financial Times, 3 December, pVI.
- Gorz A (ed)
 1976 The Division of Labour: The Labour Process and Class Struggle in Modern Capitalism. Sussex: Harvester Press.
- Gouldner A
 1962 Anti-minotaur: The Myth of Value-free Sociology, in Social Problems, 9, 3: 199-213.
- Gouldner F, Ritti R
 1966/67 Professionalism as Career Immobility, in American Journal of Sociology 22: 489-502.
- Greenwood E
 1957 Attributes of a Profession, in Social Work, 2: 44-55.
- Grootings P (ed)
 1986 Technology and Work: East-West Comparison. London: Croom Helm.
- Gross E
 1953 Some Functional Consequences of Primary Control in Formal Work Organisations, in Sociological Review, 18: 368-373.
- Gyarmati G
 1975 Ideologies, Roles and Aspirations. The Doctrine of the Professions: Basis of a Power Structure, in International Social Science Journal, 27, 4: 629-654.
- Habermas J
 1971 Toward a Rational Society. London: Heinemann.
- Hackman J
 1977 Work Design, in J R Hackman and J L Suttle (eds) Improving Life at Work. Santa Monica: Goodyear.
- Hales M
 1974 Management Science and the Second Industrial Revolution, in Radical Science, 1: 5-28.
- Hall R
 1968 Professionalisation and Bureaucratisation, in American Sociological Review, 33: 92-104.

- 1975 Occupations and the Social Structure. Englewood Cliffs, NJ: Prentice-Hall.
- Halsey A, Heath A, Ridge J
1980 Origins and Destinations. Oxford: Clarendon Press.
- Handy C
1985 The Future of Work. Oxford: Basil Blackwell.
- Harbison F, Myers C
1959 Management in the Industrial World. New York: McGraw-Hill.
- Harlow D
1973 Professional Employees' Preference for Upward Mobility, in Journal of Applied Psychology, 52, 2: 137-158.
- Hartley
1983 Professor Hartley of Imperial Science College, London, on Horizon, BBC 2, 6 March.
- Hastings A, Hinings C
1970 Role Relations and Value Adaptions: A Study of the Professional Accoountant in Industry, in Sociology, 4: 353-365.
- Haug M
1975 The Deprofessionalisation of Everyone, in Social Focus, 8: 197-213.
- 1977 Computer Technology and the Obsolescence of the Concept of Profession, in M Haug and J Dofny (eds) Work and Technology. London: SAGE, Chapter 14.
- Haug M, Sussman M
1969 Professional Autonomy and the Revolt of the Client, in Social Problems, 17: 153-161.
- 1973 Professionalization and Unionism: A Jurisdictional Dispute? in E Freidson (ed) The Professions and Their Prospects. Beverly Hills, CA: Sage, p89-104.
- Hedberg B, Mumford E
1975 The Design of Computer Systems: Man's Vision of Man as an Integrated Part of the Systems Design Process, in E Mumford and H Sackman (eds) Human Choice and Computers. Oxford: North Holland, p31-66.
- Hellier D
1985 Auditors Push for New Rules, in Sunday Times, 30 June.

- Heraud B
 1973 Professionalism, Radicalism and Social Change, in P Halmos (ed) University of Keele Sociological Review Monograph, Number 20: 85-101.
- Herzberg F
 1966 Work and the Nature of Man. New York: Crowell.
- Hickson D, Hinings C, McMillan C, Schmitter J
 1974 The Culture-Free Context of Organisational Structure: A Tri-National Comparison, in Sociology, 8: 59-80.
- Hickson D, McMillan C, Azumi K, Horvath D
 1979 Grounds for Comparative Organisational Theory: Quicksands or Hard Core?, in C Lammers and D Hickson (eds) Organisations Alike and Unlike. London: Routledge and Kegan Paul, Chapter 2.
- Hickson D, Pugh D, Pheysey D
 1969 Operations, Technology and Organisational Structure: An Empirical Reappraisal, in Administrative Science Quarterly, 14, 3: 378-397.
- Hobsbawn E
 1969 Industry and Empire. Harmondsworth: Penguin.
- Hofstede G
 1976 Nationality and Espoused Values of Managers, in Journal of Applied Psychology, 61: 148-155.
- 1977a Cultural Determinants of the Exercise of Power in a Hierarchy. Brussels: European Institute for Advanced Studies in Management. Working Paper Number 78-8.
- 1977b Cultural Determinants of the Avoidance of Uncertainty in Organisations. Brussels: European Institute for Advanced Studies in Management. Working Paper Number 77-18.
- 1978 Cultural Determinants of Individualism and Masculinity in Organisations. Brussels: European Institute of Advanced Studies in Management. Working Paper Number 78-4.
- 1979 Hierarchical Power Distance in Forty Countries, in C Lammers and D Hickson (eds) Organisations Alike and Unlike. London: Routledge and Kegan Paul.
- 1980 Culture's Consequences. London: Sage.
- Hogan A
 1984 Aggression Replaces Complacency, Accountancy Survey, in Financial Times, 13 November.

- Hoos I
1961 Automation in the Office. Washington, DC: Public Affairs Press.
- Hopper T
1978 Role Conflicts and Management Accountants in the Context of Their Structural Relationship to Production. Unpublished Masters Thesis, University of Aston Management Centre.
- Horovitz J
1978 Management Control in France, Great Britain and Germany, in Columbia Journal of World Business, 13: 16-22.

1980 Top Management Control in Europe. London: Macmillan.
- Hrebiniac L
1974 Job Technology, Supervision and Work Group Structures, in Administrative Science Quarterly, 19: 395-410.
- Hughes E
1958 Men and Their Work. Glencoe, Illinois: Free Press.

1963 Professions, reprinted in G Esland, G Salamon and M Speakman (eds) People and Work. Edinburgh: Holmes McDougall (Open University Press), p248-257.

1971 The Sociological Eye (2 Volumes). Chicago: Aldine-Atherton.
- Hulin C, Blood M
1968 Job Enlargement, Individual Differences and Worker Responses, in Psychological Bulletin, 69, 1: 41-55.
- Huxley J
1984 How ICI Pulled Itself Into Shape, in Sunday Times, 29 July, p57.
- IFAC
1979 Proposed International Code of Ethics: Professional Ethics for the Accountancy Profession, in Accountancy, August.
- Institute of Chartered Accountants in England and Wales
1966 The History of the Institute of Chartered Accountants in England and Wales: and its Founder Bodies 1970-1965. London: Heinemann.
- Institute of Cost and Management Accountants
1983 Paper presented to the Research and Training Committee of the ICMA, Committee Meeting 4 February.

Jamieson I

- 1982/83 The Concept of Culture and its Relevance for an Analysis of Business Enterprise in Different Societies, in International Studies of Management and Organisations, 12, 4: 71-105.

Jamous H, Peloille H

- 1970 Changes in the French University Hospital System, in J Jackson (ed) Professions and Professionalism. Cambridge: University Press, p109-152.

Janssen K-H

- 1974 Das dauerhafte Provisorium, in Die Zeit, No 22, 24 May: 10.

Jenkins C, Sherman B

- 1979 The Collapse of Work. London: Eyre Methuen.

Johnson H

- 1980 Markets, Hierarchies and the History of Management Accountant. Paper presented to the Third Congress of Accounting Historians, London, August.

Johnson T

- 1972 Professions and Power. London: Macmillan.
- 1976 Work and Power, in B Kansara and J Korner (eds) Politics of Work and Occupation. Milton Keynes: Open University Press, p36-61.
- 1977a The Professions in the Class Structure, in R Scase (ed) Industrial Society: Class, Cleavage and Control. New York: St Martins, p93-110.
- 1977b What Is To Be Known? in Economy and Society, 6, 2: 194-223.

Jones E

- 1981 Accountancy and the British Economy 1840-1980. London: Batsfield.

Julien M

- 1979 Can Accountants Stand the Culture Shock, in The Times, 10 December.

Karpic L

- 1966 Urbanisation et Satisfactions au Travail, in Sociologie du Travail, 8: 179-204.

Katzell R, Barrett R, Parker T

- 1961 Job Satisfaction, Job Performance and Situational Characteristics, in Journal of Applied Psychology, 45: 65-72.

- Keesing R
1974 Theories of Culture, in Annual Review of Anthropology, 3: 73-97.
- Kelly L, Worthley R
1981 The Role of Culture in Comparative Management: A Cross Cultural Perspective, in Academy of Management Journal 24: 164-173.
- Kelly J, Clegg C (eds)
1982 Autonomy and Control at the Workplace. London: Croom Helm.
- Kerr C, Dunlop J, Harbison F, Myers C
1973 Industrialism and Industrial Man. New York: Free Press.
- Klegon D
1978 The Sociology of the Professions: An Emerging Perspective, in Sociology of Work and Occupations, 5, 3: 259-283.
- Klein L
1976 New Forms of Work Organisation. Cambridge: University Press.
- Kloss G
1976 West Germany: An Introduction. London: Macmillan.
- Kommers D
1976 Judicial Politics in West Germany. London: Sage Publications.
- Kornhauser W
1962 Scientists in Industry. Berkeley, CA: University Press.
- Kroeber A, Parsons T
1958 The Concepts of Culture and Social System, in American Sociological Review, 23: 582-583.
- Kuc B, Hickson D, McMillan C
1981 Centrally Planned Development. A Comparison of Polish Factories with Equivalents in Britain, Japan and Sweden, in D Hickson and C McMillan (eds) Organisation and Nation: The Aston Programme IV. Farnborough: Saxon House.
- Kuhn T
1962 The Structure of Scientific Revolutions. Chicago: University Press.

- Kumar K
1978 Prophecy and Progress: The Sociology of Industrial and Post-Industrial Society. London: Allen Lane.
- Lafferty M
1975 Accounting in Europe. Cambridge: Woodhead-Faulkner Ltd.
- Lammers C
1978 The Comparative Sociology of Organisations, in Annual Review of Sociology, 4: 485-510.
- Lammers C, Hickson D (eds)
1979 Organisations Alike and Unlike: Towards a Comparative Sociology of Organisations. London: Routledge and Kegan Paul.
- Landsberger H
1978 The Trend Towards Citizen participation in the Welfare State: Counterveiling Power to the Professions? Paper presented to the Ninth International Congress of Sociology, Uppsala, Sweden, August.
- Larson M
1980 Proletarianization and Educated Labour, in Theory and Society, 9: 131-175.
- Lawrence P
1980 Managers and Management in West Germany. London: Croom Helm.

1986 Invitation to Management. Oxford: Blackwell.
- Lawrence P, Lorsch J
1967 Organisation and Environment. Boston: Harvard University Press.
- Lee B
1984 Basic Systems Analysis. London: Hutchinson.
- Lengerman J
1969 The Autonomy of professionals Employed in Bureaucratic Organisations: A Study of Certified Public Accountants. Unpublished Ph D Thesis, Cornell University.
- Likert R
1967 The Human Organisation. New York: McGraw-Hill.
- Little A, Westergaard J
1964 The Trend of Class Differentials in Educational Opportunity in England and Wales, in British Journal of Sociology, Vol 15:

- Littler C
1982 The Development of the Labour Process in Capitalist Societies. London: Heinemann.
- Littler C, Salamon G
1982 Braverman and Beyond: Recent Theories of the Labour Process, in Sociology, 156: 251-269.
- Lorenz C
1986 Metamorphosis of a European Company, in Financial Times, 12 May, p18.
- Loveridge R
1979 Report on Technological Innovation in Three German Organisations. Mimeo, University of Aston Management Centre, Birmingham, November.
- Lupton T
1971 Management and the Social Sciences. Harmondsworth: Penguin Books, Second Edition.
- Lupton T, Tanner I, Schnelle T
1979 Manufacturing System Design in Europe, in G L Cooper and E Mumford (eds) The Quality of Working Life in Europe. London: Associated Business Press.
- Lutz B
1981 Education and Employment: Contrasting Evidence from France and the Federal Republic of Germany, in the European Journal of Education, 4: 73-86.
- MacRae D
1974 Weber. London: Fontana.
- Maddock I
1978 Beyond the Protestant Ethic, in New Scientist, 80, 1130: 592-5.
- Maitland I
1980 Disorder in the British Workplace: the Limits of Consensus, in British Journal of Industrial Relations, 18: 353-364.
- Mallet S
1963 La Nouvelle Classe Ouvriere. Paris: Editions du Seuil.
- Mangham I, Silver M
1986 Ongoing research into in-company training in Britain, University of Bath, School of Management.
- Mann M
1973 Workers on the Move. Cambridge: University Press.

- Mann F, Hoffmann L
1960 Automation and the Worker. New York: Holt Dryden.
- Manpower Services Commission
1985 Adult Training in Britain. A survey carried out by IFF Research Ltd. Sheffield: MSC.
- Mansfield E
1968 The Economics of Technical Change. New York: Norton.
- Mant A
1977 The Rise and Fall of the British Manager. London: Macmillan.

1983 Leaders We Deserve. Oxford: Martin Robertson.
- Marceau J, Thomas A, Whitley G
1977 Business and the State: Managerial Education and Business Elites in France and Great Britain, in G Littlejohn et al (eds) Power and the State. London: Croom Helm.
- Marchington M
1979 Shopfloor Control and Industrial Relations, in J Purcell and R Smith (eds) The Control of Work. London: Macmillan, p133-155.
- Marsh R, Mannari H
1981 Technology and Size as Determinants of the Organisational Structure, in Administrative Science Quarterly, 26: 33-57.
- Marstrand P (ed)
1984 New Technology and the Future of Work and Skills. London: Francis Pinter.
- Marx K
1976 Capital Volume 1. London: Penguin.
- Maslow A
1954 Motivation and Personality. New York: Harper Row.
- Maurice M
1976 Theoretical and Ideological Aspects of the Universalistic Approach to Organisations, in (Introduction) International Studies of Management and Organisation, 6: 3-10.
- Maurice M, Sellier F, Silvestre J-J
1979 La Production de la Hierarchie dans L'Enterprise: Recherche d'un Effect Societal, in Reveu Francaise de Sociologie, 20: 331-365.

- Maurice M, Sorge A, Warner M
 1980 Societal Differences in Organising Manufacturing Units: A Comparison of France, West Germany and Great Britain, in Organisation Studies, 1: 59-86.
- McCormack M
 1984 What They Don't Teach You in Harvard Business School. Glasgow: William Collins Sons and Co Ltd.
- McKinley J
 1973 On the Professional Regulation of Change, in P Halmos (ed) Professionalisation and Social Change, University of Keele Sociological Review Monograph, Number 20: 61-84.
 1979 Towards the Proletarianisation of Physicians. Unpublished Manuscript.
- Mehan H, Wood H
 1975 The Reality of Ethnomethodology. New York: John Wiley and Sons.
- Mennel S
 1974 Sociological Theory: Uses and Unities. Middlesex: Nelson and Sons.
- Merritt G
 1985 Germany's Jobs for the Boys and Girls, in Sunday Times, 29 September, p64.
- Merton R
 1947 The Machine, The Worker and The Engineer, in Science 105: 79-81, 24 January.
- Millar J
 1980 The Impact of Micro-electronics on Employment. Paper given to the House of Lords Select Committee on Employment, 25 June.
- Millerson G
 1964 The Qualifying Associations. London: Routledge and Kegan Paul.
- Milne A
 1982 Microelectronics and its Impact on Society, in M Jack (ed) The Impact of Microelectronics Technology. Edinburgh: University Press, p102-117.
- Montagna P
 1968 Professionalisation and Bureaucratisation in Large Professional Organisations, in American Journal of Sociology, 74: 138-145.

- Moore W
1970 The Professions: Roles and Rules. New York: Russel Sage.
- Mumford E
1979 The Design of Work: New Approaches and New Needs, in T Rijnsdorp (ed) Case Studies in Automation Related to Humanisation of Work. Oxford: University Press, p9-17.
- Mumford E, Banks O
1967 The Computer and the Clerk. London: Routledge and Kegan Paul.
- Nash A
1976 Job Satisfaction: A Critique, in B J Widick (ed) Autowork and its Discontents. Baltimore: John Hopkins University Press, Chapter 6.
- National Economic Development Office
1985 Futures. Report prepared by J Bessant, K Guy, I Mills, H Rush for the Long Term Perspectives Group. London: NECD.
- Nichols T, Beynon H
1977 Living With Capitalism. London: Routledge and Kegan Paul.
- Nickell S
1978 The Investment Decision of Firms. Cambridge: University Press.
- Noble D
1979 Social Choice in Machine Design: The Case of Automatically Controlled Machine Tools, in A Zimbalist (ed) Case Studies on the Labour Process. New York: Monthly Review Press, p18-50.
- Norris K, Vaisey J
1973 The Economics of Research and Technology. London: Allen and Unwin.
- Northcott J, Rogers P, Knetsch W, de Lestapis B
1985 Microelectronics in Industry. An International Comparison: Britain, Germany and France. London: Policy Studies Institute/Anglo-German Foundation, January.
- Offe C
1976 Industry and Inequality. London: Edward Arnold.
- Oldham K
1975 Accounting Systems and Practice in Europe. Essex: Gower Press.

Oppenheimer M

1973 The Proletarianisation of the Professional, in P Halmos (ed) Professionalisation and Social Change. University of Keele Sociological Review Monograph, Number 20: 213-227.

1975 The Unionization of the Professional, in Social Policy, 5: 34-40.

Otley D

1980 The Contingency Theory of Management Accounting: Achievement and Prognosis, in Accounting, Organisations and Society, 5, 4: 413-428.

Ouchi W

1977 The Relationship between Organisational Structure and Organisational Control, in Administrative Science Quarterly, 22: 95-113.

PA Consultants

1985 A Study of Britain's Top Executives. London: PA Consultants.

Palloix C

1976 The Labour Process for Fordism to Neo-Fordism. Paper given to the Conference of Socialist Economists, in The Labour Process and Class Strategies. London: CSE.

Parker S

1971 The Future of Work and Leisure. London: Paladin.

Parsons T

1954 The Professions in the Social Structure, in Essays in Sociological Theory. Glencoe, Illinois: Free Press.

1968 Professions. New York: International Encyclopaedia of the Social Sciences.

Paul W, Robertson K

1970 Job Enrichment and Employee Motivation. London: Gower.

Perrow C

1967 A Framework for the Comparative Analysis of Organisations, in American Sociological Review, 32: 194-208.

Perrucci R

1971 Engineering: Professional Servant of Power, in American Behavioural Scientist, 14: 492-506.

Peters T, Waterman R

1984 In Search of Excellence: Lessons from America's Best Run Companies. New York: Harper Row (Warner Books Edition).

- Pettigrew A
1973 The Politics of Organisational Decision-making.
London: Tavistock.
- 1985 The Awakening Giant: Continuity and Change in ICI.
Oxford: Basil Blackwell.
- Pfeffer J
1978 Organisational Design. Illinois: AHM Publishing
Corporation.
- Piore M
1975 Notes for a Theory of Labour Market Stratification, in
R Edwards, M Reich and D Gordon (eds) Labour Market
Segmentation.
- Pollock F
1957 Automation and its Economic and Social Consequences.
New York: Pergamon.
- Popper K
1972 Objective Knowledge. Oxford: University Press.
- Poulantzas N
1975 Classes in Contemporary Capitalism. (Translated by
David Fernback). London: NLB.
- Powell A
1984 The Changing Role of Accountants in Industry.
Unpublished Ph D Thesis, University of Aston Management
Centre, September.
- Prandy K
1965 Professional Employees. London: Faber.
- Price R
1980 Masters, Unions and Men: Work Control in Building and
the Rise of Labour 1930-1914. Cambridg: University
Press.
- Prowse M
1985 Professions Must Compete Too, in European Financial
Times, 4 March.
- Quinn J
1980 Strategies for Change: Logical Incrementalism.
Illinois: Irwin.
- Reader W
1967 Professional Men: The Rise of the Professional Classes
in Nineteenth Century England. New York: Basic Books.

- Reeves T, Woodward J
 1970 Th Study of Managerial Control, in J Woodward (ed))
Industrial Organisations: Behaviour and Control.
 London: Oxford University Press, Ch 3.
- Reimann B
 1977 Dimensions of Organisational Technology and Structure:
 A Exploratory Study, in Human Relations, 30: 545-566.
- 1980 Organisational Structure and Technology in
 Manufacturing: System Versus Work Flow Level
 Perspectives, in Academy of Management Journal, 23: 61-
 77.
- Reimann B, Inzerilli G
 1979 A Comparative Analysis of Emprirical Rsearch on
 Technology and Structure, in Journal of Management, 5:
 167-192.
- Rice A
 1963 The Enterprise and the Environment. London: TIHR.
- Ritter G
 1965 The German Probelm: Basic Questions of German Political
 Life, Past and Present. Ohio: University Press.
- Ritzer G
 1977 Working Conflict and Change. Englewood Cliffs, NJ:
 Prentice Hall.
- Robbins Committee
 1963 Report on Higher Education. London: HMSO.
- Rose M, Jones B
 1984 Managerial Strategy and Trade Union Response in Plant
 Level Reorganisation of Work, in D Knights, D
 Collinson, H Wilmott (eds) Job Redesign: The
 Organisation and Control of Work. London: Heinemann.
- Rosenberg N (ed)
 1971 The Economics of Technical Change. Harmondsworth:
 Penguin.
- Roth J
 1974 Professionalism: The Sociologists Decoy, in Sociology
 of Work and Occupations, 1: 6-23.
- Rothwell R, Zegeld W
 1979 Technical Change and Employment. London: Frances
 Pinter.

- Rousseau D
1979 Assessment of Technology in Organisations: Closed Versus Open Systems Approaches, in Academy of Management Review, 4: 531-542.
- Salaman G
1973 Class and the Corporation. London: Fontana.
- Schriesheim J, Von Glinow M, Kerr S
1977 Professionals in Bureaucracies: A Structural Alternative, in P Nystrom and W Starbuck (eds) Prescriptive Models of Organisations. New York: Basic Books.
- Schutz A
1964 Collected Papers: Studies in Social Theory Volume 3. The Hague: Martinus Nijhoff.

1967 Collected Papers Volume 2. The Hague: Martinus Nijhoff.
- Scott B
1970 Stages of Corporate Development. Boston: Harvard Business School.
- Scott W
1965 Reactions to Supervision in a Heteronomous Professional Organisation, in Administrative Science Quarterly, 10: 65-81.

1975 Organisational Structure, in Annual Review of Sociology, 1: 1-20.
- Silverman D
1970 The Theory of Organisations. London: Heinemann.
- Simon W
1967 Germany: A Brief History. London: B T Batsford Ltd.
- Sirota D
1973 Production and Service Personnel and Job Enrichment, in Work Study, 22, 1: 9-15.
- Sleigh J, Boatwright B, Irwin P, Stanyon R
1979 The Manpower Implications of Micro-Electronic Technology. London: HMSO.
- Solomans D
1978 The Politicization of Accounting, in Journal of Accountancy, 145: 65-72.

- Sorge A
1977 The Cultural Context of Organisation Structure: Administrative Rationality, Constraints and Choice, in M Warner (ed) Organisational Choice and Constraint. Farnborough: Saxon House, p57-78.
- 1978 The Management Tradition - A Continental View, in M Fores and I Glover (eds) Manufacturing and Management. London: HMSO Books.
- 1979 Engineers in Management: A Study of the British, German and French Traditions, in Journal of General Management, 5, Summer, p46-57.
- 1981 Microelectronics and Vocational Education and Training, Berlin International Institute of Management Discussion Paper 81-14, September.
- Sorge A, Hartmann G, Warner M, Nicholas I
1982 Computer Numerical Applications in Manufacturing, in L Bannon, U Barry and O Holst (eds) Information Technology: Impact on the Way of Life. Dublin: Tycooly International Publishing, p99-113.
- 1983 Micro-electronics and Manpower in Manufacturing: Applications of Computer Numerical Control in Great Britain and West Germany. Aldershot: Gower Press.
- Srivastra et al
1975 Job Satisfaction and Productivity. Cleveland: Case Western Press.
- 1977 Job Satisfaction and Productivity. Ohio: Kent State University Press.
- Stieber J (ed)
1966 Employment Problems of Automation and Advanced Technology. London: Macmillan.
- Stone K
1981 The Origins of Job Structures in the Steel Industry, in M Zey-Ferrel and M Aiken (eds) Complex Organisations: Critical Perspectives. Glenview, Illinois: Scott, Foresman, Chapter 18.
- Strauss A
1975 Professions, Work and Careers. New Brunswick: Transaction Books.
- Swords-Isherwood N, Senker P
1980 Microelectronics and the Engineering Industry: The Need for New Skills. London: Francis Pinter.

- Taylor J
1971 Technology and Planned Organisational Change.
Michigan: Ann Arbor.
- Tenne R, Mannheim B
1977 The Effect of the Level of Production Technology on
Workers' Orientations and Response to the Work
Situation, in M Haug and J Dofny (eds) Work and
Technology. London: Sage, p61-80.
- The Guardian
1983 Margaret Thatcher discounting the possibility of
resisting new technologies, in Prime Minister's
Question Time, 11 March, p3.
- The Times
1977 Accountants Conflict of Interest, 25 August.
- Thompson E
1968 The Making of the English Working Class.
Harmondsworth: Penguin.
- Thompson P
1983 The Nature of Work. London: Sage.
- Thurrow L
1980 The Zero-Sum Society: Distribution and the
Possibilities for Economic Change. New York: Basic
Books.
- Toren N
1975 Deprofessionalisation and its Resources: A Preliminary
Analysis, in Sociology of Work and Occupations, 2: 323-
337.
- Touraine A
1971 The Post-Industrial Society New York: Random House.
- Trist E
1963 Organisational Choice. London: TIHR.
- 1981 The Evolution of Socio-Technical Systems as a
Conceptual Framework and as an Action Research
Programme, in A H Van de Ven and W F Joyce (eds)
Perspectives on Organisation Design and Behaviour. New
York: Wiley, Chapter 2.
- Turner C, Hodge M
1970 Occupations and Professions, in J Jackson (ed)
Professions and Professionalisation. Cambridge:
University Press.

- Van Bernem T
 1978 Vocational Education in West Germany. Paper presented to the Northumberland College Staff Conference, 13 September.
- Van Der Auwera F, Mok A
 1982 The Politics of Technology: Routinization and Union Strategies, in D Dunkerly and G Salamon (eds) The International Yearbook of Organisation Studies. London: Routledge and Kegan Paul.
- Vollmer H, Mills D (eds)
 1966 Professionalisation. Englewood Cliffs, NJ: Prentice-Hall.
- Walker C, Guest R
 1952 A Man on the Assembly Line. Cambridge, Mass: University Press.
- Wall T
 1982 Perspectives on Job Design, in J E Kelly and C W Clegg (eds) op cit, Chapter 2.
- 1984 What's New in.....Job Design? Personnel Management, April: 27-9.
- Warner M
 1984a Organisations and Experiments: Designing New Ways of Managing Work. Chicester: John Wiley and Sons Ltd.
- 1984b Microprocessors, Manpower and Society: A Comparative Cross-National Approach. Aldershot: Gower.
- Watson H
 1976 Organisational Bases of Professional Status: A Comparative Study of the Engineering Profession. Unpublished Ph D Thesis, University of London.
- Watson T
 1980 Sociology, Work and Industry. London: Routledge and Kegan Paul.
- Weber M
 1927 General Economic History. New York: Free Press.
- Weber M
 1968 Economy and Society. New York: Free Press.
- Weiler H
 1973 The Politics of Education Innovation: Recent Developments in West German School Reform. Report to the National Academy of Education, October.

- Weiner M
1981 English Culture and the Decline of the Industrial Spirit (1850-1980). Cambridge: University Press.
- Weir M
1977 Taylor in the Office, in R N Ottaway (ed) Humanising the Workplace. London: Croom Helm, p44-64.
- Wilby P
1985 Hard Work? Its Not Just Cricket, in Sunday Times, 19 May.
- Wilensky H
1964 The Professionalisation of Everyone? in American Journal of Sociology, 70: 137-158.
- Wilkinson B
1981 Technological Change and Work Organisation. Unpublished Ph D Thesis, Technology Policy Unit, University of Aston Management Centre, Birmingham, November.
- Wilkinson B
1983 The Shopfloor Politics of New Technology. London: Heinemann Educational.
- Willmott H
1983 Setting Accounting Standards in the UK: The Emergence of Private Accounting Bodies and Their Role in the Regulation of Public Accounting Practice. Paper given to the Sixth EGOS Colloquium, Florence, 2-4 November.
- Wilsher P, Beresford P
1984 The Skills Famine That's Holding Britain Back, in The Sunday Times, 25 November, p65.
- Winch P
1958 The Idea of Social Science. London: Routledge and Kegan Paul.
- Winner L
1974 Autonomous Technology: Technics-Out-of-Control as a Theme in Political Thought. Cambridge, Mass: MIT Press.
- Wirtschaftsprüferkammer
1981 Law Regulating the Profession of Wirtschaftsprüfer; Examination Regulations for Wirtschaftsprüfer; Rules for the Professional Conduct of Wirtschaftsprüfer and Vereidigte Buchprüfer. Düsseldorf: Wirtschaftsprüferkammer.

- Wittgenstein L
 1953 Philosophical Investigations. Translated by G
 Anscombe, Oxford: Basil Blackwell.
- Wood S, Kelly J
 1982 Taylorism, Responsible Autonomy and Management
 Strategy, in S Wood (ed) The Degredation of Work?
 London: Hutchinson.
- Woodward J
 1958 Management and Technology. London: HMSO.
 1965 Industrial Organisaiton. Oxford: University Press.
- Woodward J (ed)
 1970 Industrial Organisations: Behaviour and Control.
 Oxford: University Press.
- Ziman J
 1976 The Force of Knowledge: The Scientific Dimension of
 Society. Cambridge: University Press.
 1978 Reliable Knowledge: An Explanation of the Grounds for
 Belief in Science. Cambridge: University Press.
- Zwerman W
 1970 New Perspectives on Organisation Theory. Connecticut:
 Greenwood.