
Multiple Paradigms and Organizational Analysis: A Case Study

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Abstract

The paper describes a new methodology for organizational analysis, *multiple paradigm research*. A case study is presented which uses the Burrell and Morgan (1979) model as the framework for producing four accounts of work behaviour in the British Fire Service. Details of these accounts — functionalist, interpretive, radical humanist and radical structuralist — are presented, and the findings compared. Some problems associated with the method are discussed.

Introduction

The aim of this paper is to describe a multiple paradigm study of a work organization and in so doing to develop a new methodology for social science.

The paper outlines a research programme in which the multiple paradigm model of Burrell and Morgan (1979) is used to conduct an empirical analysis of work behaviour in the British Fire Service. Insight into the organization is gained through using the four Burrell and Morgan paradigms as empirical frames of reference. Results are obtained through using a theory and methodology from each paradigm as the basis for research. Details of the fieldwork are given, research findings are presented and the validity of the method is discussed.

Multiple Paradigm Research

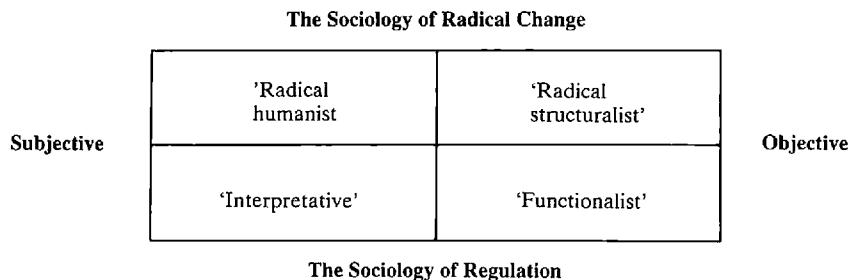
The Burrell and Morgan Model

Of the many models which have attempted to define paradigms in social and organizational theory, the one developed by Burrell and Morgan (1979) has attracted the most attention (Louis 1983; White 1983; Morgan 1990). Burrell and Morgan define four paradigms for organizational analysis by intersecting subject-object debates in the 'theory of social science' with consensus-conflict debates in the 'theory of society'. The four paradigms produced are the functionalist, the interpretive, the radical humanist, and the radical structuralist (see Figure 1). The authors chart paradigms for organizational analysis by developing a framework

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Organization
Studies
1991, 12/2:
275-299
© 1991 EGOS
0170-8406/91
0012-0012 \$2.00

Figure 1
Four Paradigm
Model of Social
Theory (Burrell
and Morgan 1979)

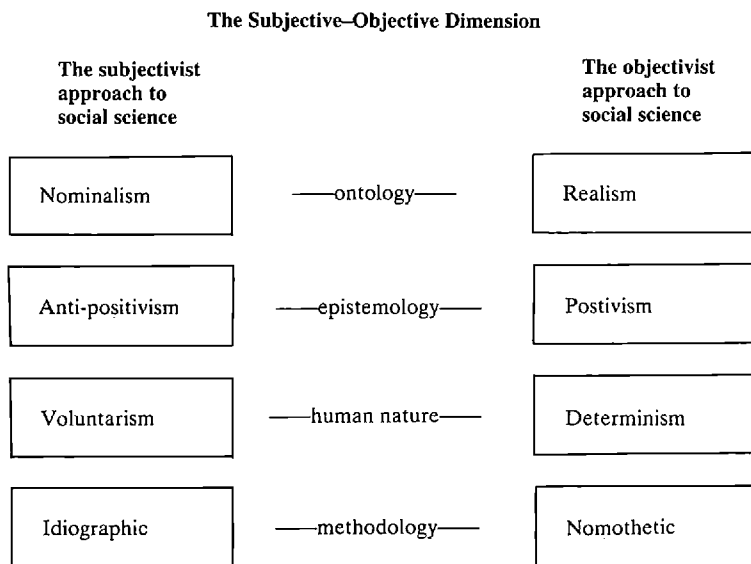


which also takes into account major theoretical positions in economics, philosophy, politics, psychology and sociology.

Burrell and Morgan dissect social science by reference to the philosopher's tool-kit of ontology and epistemology. They concentrate upon the metatheoretical assumptions which underpin theoretical statements. Having identified such assumptions, they plot various theoretical positions on their four paradigm model.

For analyzing social science they suggest that it is useful to conceptualize 'four sets of assumptions related to ontology, epistemology, human nature and methodology' (1979: 1; see Figure 2). They suggest that all social scientists, implicitly or explicitly, approach their disciplines via assumptions about the nature of the social world and how it should be researched. Assumptions are made about: 'the very essence of the phenomena under study' (ontology), 'the grounds of knowledge' (epistemology), 'the relationships between human beings' (human nature), and 'the way in which one attempts to investigate and obtain "knowledge" about the "real world"' (methodology).

Figure 2
A scheme for
Analyzing
Assumptions
About the Nature
of Social Science
(Burrell and
Morgan 1979)



For assumptions about society, Burrell and Morgan draw upon attempts by earlier social theorists (e.g. Lockwood 1956; Dahrendorf 1959) to distinguish between 'the approaches of sociology which concentrate on explaining the nature of social order and equilibrium . . . and those . . . concerned with the problems of change, conflict and coercion' (1979: 10). However, instead of invoking the usual nomenclature of order–conflict or consensus–conflict debates, Burrell and Morgan talk of differences between the 'sociology of regulation' and the 'sociology of radical change'. By polarizing these dimensions, the 'conservative' functionalist and interpretive paradigms are contrasted with the 'radical' humanist and structuralist paradigms. Conversely, with regard to the nature of social science, the functionalist and radical structuralist paradigms, which adopt an 'objectivist' and 'scientific' stance, are contrasted with the 'subjectivist' emphases of the interpretive and radical humanist paradigms. In presenting the model, the authors argue that these paradigms should be considered 'contiguous but separate — contiguous because of the shared characteristics, but separate because the differentiation is . . . of sufficient importance to warrant treatment of the paradigms as four distinct entities' (1979: 23). As such, the four paradigms 'define fundamentally different perspectives for the analysis of social phenomena. They approach this endeavour from contrasting standpoints and generate quite different concepts and analytical tools' (1979: 23).

The Four Paradigms

The four paradigms can be described as follows:

The *functionalist paradigm* rests upon the premises that society has a real, concrete existence and a systematic character and is directed toward the production of order and regulation. The social science enterprise is believed to be objective and value free. The paradigm advocates a research process in which the scientist is distanced from the subject matter by the rigour of the scientific method. The paradigm possesses a pragmatic orientation; it is concerned with analyzing society in a way which produces useful knowledge.

In the *interpretive paradigm*, the social world possesses a 'precarious ontological status'. From this perspective, social reality, although possessing order and regulation, does not possess an external concrete form. Instead it is the product of intersubjective experience. For the interpretive analyst, the social world is best understood from the viewpoint of the participant-in-action. The interpretive researcher seeks to deconstruct the phenomenological processes through which shared realities are created, sustained and changed. Researchers in this paradigm consider attempts to develop a purely 'objective' social science as specious.

The *radical humanist paradigm* shares with the interpretive paradigm the assumption that everyday reality is socially constructed. However, for the radical humanist, this social construction is tied to a 'pathology of consciousness', a situation in which actors find themselves the prisoners of

the (social) world they create. The radical humanist critique highlights the alienating modes of thought which characterize life in modern industrial societies. Capitalism, in particular, is subject to attack in the humanist's concern to link thought and action as a means of transcending alienation.

Finally, in the *radical structuralist paradigm*, we also find a radical social critique, yet one at odds with that of the radical humanist paradigm in being tied to a materialist conception of the social world. In this paradigm, social reality is considered a 'fact'. It possesses a hard external existence of its own and takes a form which is independent of the way it is socially constructed. In this paradigm, the social world is characterized by intrinsic tensions and contradictions. These forces serve to bring about radical change in the social system as a whole.

Multiple Paradigm Research: A Methodology

The attempt described here to operationalize multiple paradigm research involves a study of work behaviour in a division of the British Fire Service. We have given this division the pseudonym Lowlands Fire Service.

In the study, theories and methods characteristic of the four Burrell and Morgan paradigms were used to generate a range of empirical data sets. An understanding of the meta-theoretical principles of the Burrell and Morgan model enabled the researcher to become familiar with the four paradigm cultures. The approach to paradigm assimilation was one whereby specific social philosophies were accepted as the basis for immersion into the literature and methods of a theory community. Familiarization with a paradigm was accomplished by seeking to 'bracket' phenomenologically the assumptions of other paradigms. The object was to produce authentic paradigm accounts from first-hand experience. The result of the exercise was a social anthropological method for organizational research.

The research process saw three major positions adopted as methodological alternatives to the (systems theory) 'orthodoxy' of the functionalist paradigm. These were phenomenology (interpretive paradigm), critical theory (radical humanist paradigm) and Marxian structuralism (radical structuralist paradigm). In terms of the Burrell and Morgan framework, the investigations started in the functionalist paradigm and moved in a clockwise direction. The research programme began with a traditional functionalist investigation, a questionnaire survey. Investigations representative of each of the three remaining paradigms were undertaken thereafter.

Topics

Before the fieldwork commenced one question remained — should we study a single aspect of work organization or a number of aspects? One could either focus on a single issue of work organization and examine this

from the four paradigm perspectives or else specify four separate research issues with each paradigm addressing a particular topic.

While at first the former method was favoured, because it would allow the researcher to make straightforward paradigm comparisons, this was later found to raise both logical and practical difficulties. An initial difficulty concerned problem definition. Whereas a particular research problem may be considered legitimate for one paradigm community, this may not be so for another. This invoked the epistemological debate about whether it is possible to translate the meaning of one technical language into that of another, given that the four Burrell and Morgan paradigms are incommensurable (see Hassard 1988 on this point). A second problem was that an iterative approach of this kind would not cover much research ground. While, as a *methodological* exercise, it would be interesting — producing four different accounts of the same topic — as an *empirical* exercise it would offer only marginal insight into the organization as a whole.

Given these considerations, the second option was chosen, for each paradigm to analyze a separate issue of work organization. Put briefly, the four main subjects of work organization studied were: job motivation (functionalist paradigm), work routines (interpretive paradigm), management training (radical humanist paradigm) and employment relations (radical structuralist paradigm).

The choice of topics and their pairing with particular paradigms was, however, based upon pragmatic considerations as much as principles of logical research design. In particular, a worry that it might be difficult to conduct research from the so-called 'critical' (Donaldson 1985) paradigms — interpretive, radical humanist and radical structuralist — was overcome by the fact that there already existed examples of organizational analysis from these perspectives, notably work on task routines by ethnomethodologists, management education by critical theorists, and employment relations by labour process sociologists. While the research topics chosen were important for organizational analysis, the existence of these examples, coupled with the fact that the organization could provide ready data on such issues, influenced the design process considerably.

Pragmatism also played a part in deciding the order in which the investigations should be accomplished. While the decision to commence research in the functionalist paradigm was based primarily on the fact that Burrell and Morgan (1979) had started here, it was recognized that this would also offer political advantages. In particular, if a functionalist study was undertaken first — with the result that senior management was given some free consultancy — this would assist the researcher in establishing his credibility prior to undertaking investigations which might seem less relevant in the host organization's terms.

A Multiple Paradigm Case Study

The Fire Service Case: An Introduction

As each of the four studies was a fairly substantial project, only a series of introductions will be given (see Hassard 1985 for a more detailed set of descriptions). We will explain the decision processes involved in developing the methodology, give brief introductions to the fieldwork and present some examples from the data. To situate each study in terms of the methodology, a case review is presented for each paradigm. These reviews offer comparative analyses as the paper progresses. Finally, comments on the research process and the methods employed are found in the conclusion.

The Functionalist Paradigm

For all the studies, the first concern was to choose a theory and a method consistent with the work of the paradigm.

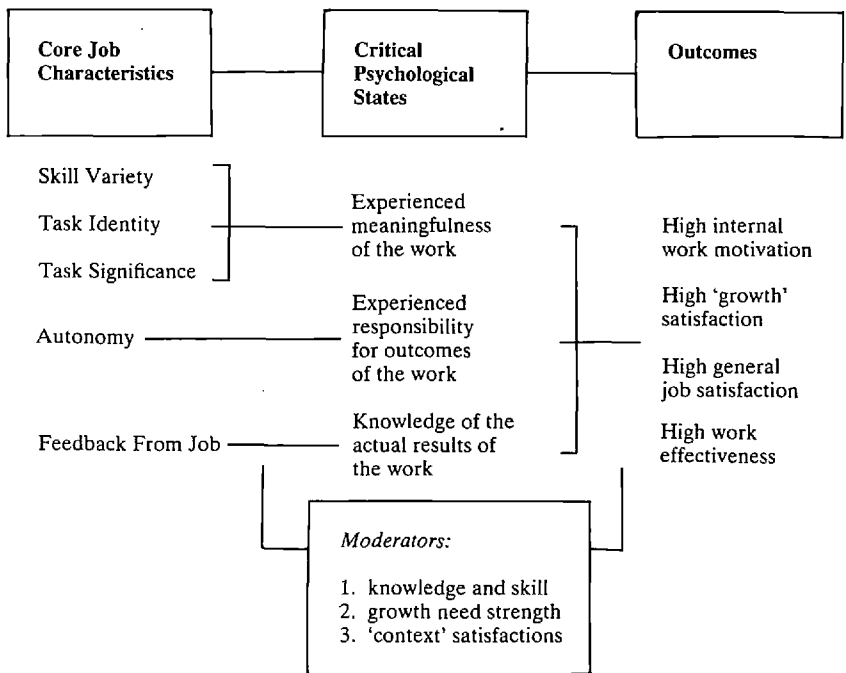
In the Burrell and Morgan model, the main approaches listed as representative of the functionalist paradigm are social system theory and objectivism, theories of bureaucratic dysfunctions, the Action Frame of Reference, and pluralism. Of these, social system theory is the approach Burrell and Morgan place at the heart of the paradigm. It represents work characteristic of what Silverman (1970) and others have termed the 'systems orthodoxy' in organizational analysis (see Clegg and Dunkerley 1980, Donaldson 1985; Reed 1985). By far the majority of work cited in the functionalist paradigm falls under this heading. This is material taught on organizational behaviour courses in business schools and university management departments. It encompasses classical management theory, human relations psychology, socio-technical systems analysis, and contingency theories of organization structure. The aim is to define law-like relationships between, for example, organization structure, work motivation, and industrial performance.

As an agreement was reached with the host organization to study work motivation as part of the research, it was decided — for political as well as pragmatic reasons — to complete this as part of the functionalist investigation.

The Research

The functionalist research began with a review of the current theories and techniques available to researchers who wish to study work motivation. This review suggested that Job Characteristics Theory (Hackman and Oldham 1976), a development of expectancy theory, was the most prominent research approach and that a questionnaire survey, the Job Diagnostic Survey (JDS) (Hackman and Oldham 1975, 1980), was the most reliable research instrument. Consequently, the Job Characteristics approach (Figure 3) was chosen as the theoretical basis for the functionalist study, with the JDS as the main data collection instrument.

Figure 3
Hackman and
Oldham's
(1980) Job
Characteristics
Model of Work
Motivation



The research process was as follows. The aim was to assess how full-time firemen evaluate job characteristics in terms of motivational potential. Coupled to this, the host organization requested attitudinal data for three specific groups of firemen differentiated by age and length of service. The result was a design in which 110 questionnaires were distributed to firemen (i.e. those below Leading Fireman rank) meeting the following criteria: (i) men within their probationary period (i.e. with less than two years service) and who were less than 25 years old, (ii) 'qualified' firemen of less than 30 years of age and who had less than 8 years service (subjects from a 5–7 year service range were chosen), and (iii) firemen of over 35 years of age and who had at least 15 years service each. The objective was to understand the changing orientations in a fireman's career. We wished to discover how these groups of firemen differed in terms of their attitudes to the job's motivating potential. In sum, a total of 93 questionnaires were returned, this figure representing a response rate of 85 percent of the total sample.

Examples from the Data

In terms of accepted levels of statistical inference, and using the Kruskal-Wallis test, the analysis found significant differences between scores for the three Fire Service groups on 8 of the 20 JDS scales (see Table 1). To interpret these results (see Table 2), the Fire Service scores were compared with the normative scores published by Oldham, Hackman and Stepina (1979) for a range of jobs in the United States (data for these

Table 1 Kruskal-Wallis One-Way Analysis of Variance

	Mean Ranks			X ²	Significance
	0-2 years	5-7 years	15-25 years		
Skill Variety	43.4	46.0	36.2	2.977	.2257 (N.S.)
Task Identity	50.8	46.1	33.5	6.483	.399 (.05)
Task Responsibility	46.0	45.3	36.2	2.846	.2410 (N.S.)
Autonomy	37.5	48.5	35.0	5.998	.498 (.05)
Feedback from Job	59.4	46.9	29.4	15.906	.0004 (.001)
Feedback from Agents	52.5	47.0	31.7	9.493	.0087 (.01)
Dealing with Others	50.5	47.0	31.7	9.493	.0087 (N.S.)
Expd. Responsibility	46.5	40.8	42.1	0.485	.7846 (N.S.)
Expd. Meaningfulness	58.4	42.8	35.2	7.582	.0223 (.05)
Knowledge of Results	38.2	42.5	42.7	0.320	.8523 (N.S.)
General Satisfaction	44.5	45.9	35.9	3.120	.0722 (N.S.)
Growth Satisfaction	57.2	42.4	36.0	6.267	.0436 (.05)
Internal Motivation	46.7	43.2	38.8	1.061	.5882 (N.S.)
Pay Satisfaction	59.2	37.4	41.9	7.095	.0288 (.05)
Security Satisfaction	36.7	42.0	43.8	0.704	.7034 (N.S.)
Social Satisfaction	46.2	44.3	37.5	1.794	.4079 (N.S.)
Supervisory Satisfaction	42.9	44.6	38.2	1.267	.5306 (N.S.)
'Would Like' G.N.S.	36.4	46.1	38.6	2.372	.3055 (N.S.)
Job Choice G.N.S.	41.9	49.5	32.3	9.079	.0107 (.05)
Total G.N.S.	39.1	48.4	34.6	5.963	.0507 (N.S.)

Table 2 J.D.S. Means and Standard Deviations

	0-2 years x	S.D.	5-7 Years x	S.D	15-25 Years x	S.D	All Fire Groups x	S.D	U.S. Norm x
Skill Variety	6.0	0.69	6.0	0.95	5.5	1.34	5.9	1.08	4.7
Task Identity	4.4	1.09	4.1	1.09	3.5	1.10	3.9	1.16	4.7
Task Significance	6.6	0.41	6.5	0.70	6.2	0.97	6.4	0.78	5.5
Autonomy	4.0	0.86	4.4	1.05	3.7	1.21	4.0	1.10	4.9
Feedback from Job	5.5	1.00	5.0	0.86	4.2	1.14	4.8	1.09	4.9
Dealing with Others	6.5	0.82	6.4	0.57	6.0	0.99	6.3	0.78	5.6
M.P.S. Additive	26.6	2.86	26.0	2.89	23.0	3.86	25.1	3.44	N/A
M.P.S. Multiplicative	128.0	49.9	123.0	41.3	84.0	47.8	109.0	47.0	128.0
Expd. Meaningfulness	6.2	0.80	5.7	0.90	5.5	0.88	5.7	0.87	5.2
Expd. Responsibility	5.5	0.65	5.2	0.79	5.2	0.96	5.3	0.81	5.5
Knowledge of Results	5.3	0.67	5.3	0.86	5.3	1.21	5.3	0.94	5.0
General Satisfaction	5.8	0.96	6.0	0.58	5.4	1.18	5.8	0.90	4.7
Internal Motivation	5.9	0.58	5.8	0.59	5.7	0.75	5.8	0.65	5.6
Growth Satisfaction	5.9	0.50	5.5	0.86	5.2	1.07	5.5	0.91	4.8
Job Security	5.3	1.05	5.6	0.89	5.5	1.21	5.5	1.02	4.8
Pay Satisfaction	5.7	0.40	4.3	1.49	4.4	1.87	4.6	1.57	4.3
Social Satisfaction	6.1	0.48	6.0	0.64	5.7	0.89	6.0	0.73	5.3
Supervisory Satisfaction	5.7	0.54	5.5	1.21	5.2	1.42	5.4	1.19	4.8
'Would Like' G.N.S.	5.2	0.93	5.6	1.14	5.3	1.06	5.5	1.04	5.7
Job Choice G.N.S.	3.8	0.63	3.9	0.52	3.5	0.56	3.8	0.60	4.4
Total G.N.S.	4.5	0.67	4.7	0.68	4.4	0.61	4.6	0.66	5.1

norms were obtained from 6930 employees on 876 jobs in 56 organizations). U.S. norms were used because of the lack of a database for British jobs.

From Table 2, we see that for the Fire Service sample overall, whereas high scores on the *Core Job Characteristics* section were recorded for the Skill Variety and Task Significance scales, scores well below the U.S. norms were found for Task Identity and Autonomy; the mean for the Job Feedback scale was marginally below the U.S. norm. For the *Critical Psychological States* section, the Fire Service samples recorded a high mean on the Experienced Meaningfulness scale, but scores for Knowledge of Results and Experienced Responsibility which were, respectively, slightly above and slightly below the U.S. norm. For the *Affective Outcomes* section, which measures General Satisfaction, Growth Satisfaction, and Internal Work Motivation, on each scale the sample mean for the Fire Service was higher than the U.S. norm. The score for General Satisfaction was particularly high. Finally, for the *Moderator Variables*, the Fire Service sample recorded scores higher than the U.S. norms on each of the four 'context' satisfaction scales — Job Security, Pay Satisfaction, Social Satisfaction and Supervisory Satisfaction. Particularly high scores were recorded for the Job Security, Social Satisfaction and Supervisory Satisfaction scales. Scores for the Growth Need Strength scales however fell well short of the U.S. norms.

On contrasting the results for the three Fire Service groups, the first thing which strikes us is the consistent and related way in which the groups score on the various scales. With the exception of scores for Growth Need Strength, the rule is that, for each scale, the Probationers group records the highest mean and the 15–25 year group the lowest, with the 5–7 year group recording a mean somewhere between those two. If we analyze the results in terms of the three main sections of the Hackman and Oldham model, we find that for *Core Job Characteristics* the Probationer's group and the 5–7 year group record substantially higher normative scores than the 15–25 year group, on all scales. When the between-group differences in mean values are computed using the Kruskal–Wallis test, the comparison results in levels of statistical significance being recorded for the scales measuring Task Identity ($p>0.05$), Autonomy ($p>0.05$), Feedback From Job ($p>0.001$), and an additional feedback scale, Feedback From Agents ($p>0.01$). Similarly, the scores for the *Critical Psychological States* also reflect this pattern, with a statistically-significant between-group difference computed for the Experienced Meaningfulness scale ($p>0.05$). The pattern is again visible for the *Affective Outcomes* section, with a significant between-group difference recorded for the Growth Satisfaction scale ($p>0.05$). Only for the Growth Need Strength scales does the pattern change, with Probationers scoring lowest for 'would like' Growth Need Strength and again below the 5–7 years group for 'job choice' Growth Need Strength. All the Fire Service groups scored below the U.S. norms on the Growth Need Strength dimensions.

The evidence from this research suggests that although the Firemen's job

possesses relatively modest levels of motivation potential, this is not in fact a problem for employees whose needs for psychological growth at work are also modest. We discover that whereas the overall motivation potential score (M.P.S.) for the job is low (109 compared with the U.S. norm of 128) the scores for the job satisfaction scales are generally high. There are of course reasons for this. Notably the way the motivation potential score is computed (see Hackman and Oldham 1980) makes for a rather distorted picture of the Fireman's job. In particular, the low scores for Task Identity and Autonomy — which represent two of the four main dimensions on which M.P.S. is calculated — serve to reduce significantly the overall motivation score. However, whereas in industry a job possessing low Task Identity and low Autonomy would be viewed negatively, in the Fire Service the absence of these characteristics is not a matter of great concern. In the Fire Service, low Task Identity stems mainly from Firemen being called out to emergencies, and low Autonomy from working in a para-military organization. More important to the Fireman in terms of motivation is that his job offers Task Significance and Skill Variety.

The research also examined both the intercorrelations between the model's predicted relationships, and the internal consistency reliabilities of the JDS scales. Intercorrelations were computed using both Pearson Product-Moment and Spearman Rank-Order methods. For the relationship between Core Job Characteristics and their corresponding Critical Psychological States, no major correlational differences were found between the findings of this research and the results cited by Oldham et al. (1979). However, the internal consistency reliabilities revealed that several scales contained questions with low, and in some cases negative correlations with other items measuring the same construct.

Case Review

In terms of the Burrell and Morgan model, the functionalist study sees an account which is realist, positivist, determinist and nomothetic. The research develops a methodology in which psychometric techniques and computer-based analysis are used to provide a sophisticated understanding of the factual nature of the organization. The research process draws inspiration from the scientific method, with statistical tests being used to discern those relationships we can consider 'significant' for future organizational success. The study obtains generalizable knowledge of a form which claims to be valid and reliable. Explanations are couched in a form promising practical success, especially by defining the concept of organization as a practical activity. This approach is one which attempts to divorce the role of social values from social research. The study epitomizes the classical quasi-experimental approach to organizational analysis.

The Interpretive Paradigm

The interpretive paradigm involved an ethnomethodological analysis of Fire Service work routines. The study examined the main activities of the working day and, in particular, how firemen take recourse to context-linked typifications in order to make sense of their activities. The research asked firemen to describe and explain their daily tasks, the ethnography being produced from a data-base of unstructured conversational materials collected during a three-month period of non-participant observation. In conducting the analysis, we accepted the premise that it is only through the speech, gestures and actions of competent participants that we can understand the essence of their work. The aim was to let the participants themselves structure their conversations, descriptions and analyses. An inductive approach was developed in which the knowledge of the participants was treated as 'strange' to the researcher. During the observation period, the researcher employed the phenomenological suspension method of 'epoché' in order to 'bracket' existing personal beliefs, preconceptions and assumptions (Husserl 1931: 108ff).

The Research

In practice, the research used the methodology developed by Silverman and Jones (1975), in which subjects are required to explain activities in terms of how they are worked through. The fieldwork involved accompanying fireman during the working day and asking them to explain their activities before, during and after each event. The aim was to appreciate the 'stocks of knowledge' and 'recipes' Firemen employ in making sense of their work (Schutz 1967). The ethnography was presented as a description of the routine events which occur during a normal working day.

Examples from the Data

The analysis highlighted how, in the Fire Service, routine events are accomplished within a context of uncertainty. An absence of firm personal control over immediate future events, which stems primarily from the threat of emergency calls, is accepted within a general cultural framework of instability. While there exists an official task schedule to direct non-operational periods, the factual nature of this schedule is established through the constant interpretation of its usefulness by the Station Officer and the Watch (team of Firemen). The main reason for such interpretation is that events within the shift must be assembled so as to make the day run smoothly, without any temporal gaps. The official work schedule is rarely congruent with the actual process of events. As many events in the schedule routine are considered 'low priority', firemen are frequently transferred to activities deemed more appropriate to maintaining a smooth flow of activity:

Fireman A: 'We were supposed to go for a divisional drill this morning and we've got this station efficiency (exercise) here as well. But the machine (fire

engine) I'm on has got this water leak on the radiator so we knocked it off the run. The drill went out the window. (And) the station efficiency for me went out the window. I went back and got another machine from another station and brought it back, and everybody knocked off drill then to put it back. They're still working on it now. Whether we'll carry on with drill after I don't know . . .'

One of the main reasons for this lack of fixity stems from the strategic relationship between the Station Officer and the Divisional Officer. A major concern of Station Officers is to be able to account for the deployment of Watch personnel during periods laid down for routine work (equipment tests, cleaning, building inspections, etc.). This is prompted by the uncertainty as to whether a Divisional Officer will visit the Station without warning and question the validity of the tasks being undertaken. With this in mind, Station Officers attempt to make the day 'acceptable' by either including, or excluding, tasks as necessary. This 'safeguarding' process is most notable in the late afternoon when, although *work* may be in progress, the 'real work' may have been finished much earlier. When the *real* work has been finished 'fill-in' work will be prescribed in order to 'keep the day going'. Fill-in work can take the form of work of a peripheral nature, or the repetition of work completed earlier:

Fireman B: 'The favourite of the Fire Service is "inside gear". That's the favourite one. They can get you on that any time of the day, any day. You've possibly used a ladder and a standpipe and two lengths of hose this morning on drill. So you've used them, wiped them off and put them back. Now for all intents and purposes they're clean because you've done them and you've put them back on. But probably if they've run out of work at 4 o'clock [they will say] "er well carry on with the inside gear until 5 o'clock". And you know you've done it, but you've got to do it again . . .'

Fireman C: 'Now yesterday's a typical example. Now I leathered off that machine (fire engine) four times, me, God Almighty. But they wanted it done. Now the last time I'd leathered it off, put it (the fire engine) away, the lot, finished, it was half past four. Now Larry (the Sub Officer) says "you can't go yet its not five o'clock. Don't go sloping off doing anything you shouldn't be" . . .'

Another theme running through the ethnography was how task execution serves as an arena for displays of personal authority and discretion. In the process of physically accomplishing the routine work, firemen attempt to express their own social identities. Instances of personality displays were found throughout the observation period and for virtually all the task sequences.

A recurrent theme was that behaviour is indexed to group-wide knowledge of strategies for personal advancement in the organization. Instances of such processes are probationer firemen enacting tasks 'differently' to qualified men, and 'promotion-minded' men displaying different behaviour patterns to non-promotion minded (and commonly older) firemen. To this end, the Watch becomes stratified as to whether tasks are completed 'properly' in terms of the 'code of context' (Weider 1974).

As an example, the first main task of the shift is the Machine Check, or

inspecting the fire engine to make sure that it, and the equipment stored on it, is ready for operational duty. Although 'officially' this task should be completed by firemen checking the various pieces of equipment against an inventory board, in practice, firemen adopt various strategies for its proper completion. While Probationers will suggest that they *do* complete the job by checking off the items, other firemen either 'make a show' by simply carrying the inventory board around with them or, as in the case of other, frequently older, firemen check the fittings by just lifting up the lockers and noting whether the contents seem intact. Firemen take recourse to a criterion of 'knowing what's expected of you' in assessing the 'proper' actions to be taken.

Fireman D: 'You make short cuts when you get to know what's expected of you. It comes with experience really. You know a bloke in his probationary period wouldn't dream of doing some of the things you do when you've finished it. He thinks, well I've got to do that *properly*, you know, I must do that. But when you've done it and you're sort of out of your probation you think well I can relax a bit now . . .'

Fireman E: 'If you're youngish and still keen on the promotion side, then you're going to put a little more effort, well not effort so much as the way you go about it is going to be a little bit happier. Because if you're seen to be doing things *properly* then hopefully this will come out in any report that the boss puts in for you . . .'

Coda

These then are some examples of themes explored in the interpretive ethnography. The research overall portrays the everyday work of a Fire Station in terms of how firemen make sense of and enact the task system (see Hassard 1985). The cement which binds the analysis is a concern for the social construction of task routines and for the phenomenology of work organization.

Case Review

In the interpretive study, the form of evaluation has changed markedly from that of the functionalist paradigm. We now find explanations which, in Burrell and Morgan's terms, are nominalist, anti-positivist, voluntarist and ideographic. Whereas in the functionalist study we found an 'organized' world characterized by certainty and self-regulation, in this second study we discover a 'life-world' of social construction (Schutz 1967). Instead of statistical correlations, we see a web of human relationships. The analysis outlines how participants create rules for 'bringing-off' the daily work routine, with personal actions being indexed to a contextual system of meaning (Garfinkel 1967). The research de-concretizes the view of organizational reality created in the first paradigm; it suggests that (Fire Service) organization is a cultural phenomenon which is subject to a continuous process of enactment.

The Radical Humanist Paradigm

In terms of research contributions, the Radical Humanist is the least developed of Burrell and Morgan's four paradigms. For social theory it includes French Existentialism, the Anarchistic Individualism of Stirner, and the Critical Theory of Gramsci, Lukacs, and the Frankfurt School. For organizational analysis, some steps 'towards an anti-organization theory' are outlined. Burrell and Morgan cite Beynon's (1973, 1986), *Working for Ford* and Clegg's (1975) *Power, Rule and Domination* as characteristic of a nascent 'Critical Theory' approach to organizational analysis.

The Research

The third study was conducted in the style of Critical Theory. In this research the links with social and political theory were made more explicit than in the works of Beynon, Clegg and others, with Gramsci's concept of ideological hegemony being used to derive interpretations of workplace culture. In line with Gramsci's thesis on 'Americanism and Fordism', the research highlighted the role played by administrative science in reproducing organizational 'common-sense' (Gramsci 1977; Adler 1977). The study describes how administrative science is used to train firemen to cross what Goodrich (1920) calls the 'frontier of control'.

In producing this analysis, two arguments were developed. The first was that the cohesion between administrative science and capitalist ideology should be described as a symbiotic relationship (Baritz 1960, Fleron and Fleron 1972; Nord 1974; Allen 1975; Clegg and Dunkerley 1980). The second was that this symbiosis is fostered by the growth of management training in both the public and private sectors. In line with Clegg and Dunkerley's (1980) view that a function of management education is the 'reproduc(tion) (of) ideology as well as middle class careers' (1980: 578) and that this ideology is produced through learning 'modern management techniques' at training institutions, the radical humanist research explained how such processes are accomplished in the Fire Service.

Examples from the Data

The fieldwork involved an analysis of training practices on courses designed to prepare firemen for promotion to first line supervision. The objective was to discover, first hand, the impact of training at this important level. To achieve this, the researcher enrolled on a 'Cadre Leading Fireman's' training course (4 weeks) — a course designed to teach promotion candidates the techniques of managerial work. The research described not only the formal processes of presentation but also the personal experiences of participants. Data were gleaned from tape recordings of class sessions, especially of discussions between the instructors (Fire Service Training Officers) and the 'Cadre' Leading Firemen (CLF's).

The analysis, which again took the form of an ethnography, described

how the use of supportive educational materials on in-house training programmes allows the organization to keep tight control over both the medium and the message. Although course members are removed from their immediate working environments (Fire Stations), in staying within the bounds of the organization's influence (Lowlands Fire Service Training School) they remain subject to normal constraints and conditions.

Training Officer 2 (On the use of Maslow's 'Hierarchy of Needs'):

'What is "esteem" nowadays? What does that word mean? You know, you can have a dustman driving a Rolls Royce now, and an executive managing director redundant. So where is "esteem" nowadays? We've found a terrific comparison in terms of Maslow's ladder. That (Maslow's ladder) needs updating. *So we do our own . . .*'

The research described how senior training officers were able to select materials which reinforced the logic of the authority structure. An example from the research was the synergism between Adair's (1968, 1973, 1983, 1984) work on leadership and the reproduction of *loyalty* in military and para-military organizations. As Adair's ideas have been well received in the Army so has his Sandhurst Package, to quote one Senior Training Officer, become 'the gospel' for an organization with a similar command structure, the British Fire Service. Adair's 'theory' has become a key ingredient of the organization's recipes for maintaining commitment.

For this theme, the ethnography outlined how a main objective of CLF training is to establish the view that a Leading Fireman's loyalties must lie with the command structure of the Fire Service rather than with the rank and file firemen. Senior officers feel that on promotion to Leading Fireman a major problem facing the role incumbent is a sense of ambiguity over the direction his loyalties should take. A major function of training at this level is therefore to establish the *logic* of the Leading Fireman's allegiance to the command structure of the organization.

Training Officer 1: (De-brief to CLF's for the film 'A Question of Loyalties)

'Well there you are. There's the situation. Now can anyone tell me it wouldn't happen in the Fire Service? One day a Fireman, your best mucker, all night at the bar with him, best snooker player on the Watch. The next day he's the Leading Fireman on the Watch. No doubt about it, he's there, he's got it, all the badges of office . . . (And conversely) there's a bloke (negative character on film) — a temporary L.F. if you like, twenty year fireman — all of a sudden its swiped off him and given to the youngster on the Watch. *You can see the problems. You can identify the problems . . .*'

Throughout the course, the dominant theme was of instructors seeking to settle the CLF's doubts over this question of loyalties. Training Officers attempted to establish a climate conducive to performing simulations of 'effective' management practice. This was a climate in which the roles of the 'transmitters' of authority were portrayed as qualitatively different to those of the 'receivers'. Stages of the training programme saw various media deployed to accomplish this objective — lectures, videos, role plays, etc. The instructions which accompanied these media ranged from

philosophical discussions of the division of authority and non-authority positions to basic messages about career enhancement.

Training Officer 2 (from class discussion following the de-brief)

'I can tell you that the only loyalty you should consider above all else is loyalty to the command structure. That's got to be your prime consideration and any other loyalties you have should come second to that'

CLF 1

'For arguments sake say you are a Leading Fireman on a particular Watch and you've got a cracking bunch of blokes and the two blokes above you (Station Officer, Sub Officer) are, you know, a right bunch of wankers. Any problem that you get as a result from your blokes has directly arisen because of these two. Then where's your loyalties then?'

Training Officer 2

'Well first of all think realistically about the situation. Out and out wankers or not who's going to give you your next rank, the firemen or the S.O. and Sub O.? Who's going to recommend you as showing the potential to hold any further rank?'

CLF2

'M'm I think that what's being said though is that there are some situations where your loyalties will be reversed because of your superiors. It you like, your loyalties will have to be to the Watch'

Training Officer 2

'These are problems you can't sort out until they manifest themselves, and the best way of dealing with the problem is your way. But you've been given the guidelines haven't you. What you've done you've sat there for two days now and all of a sudden this morning you've broadened your horizons. When you're made up to Leading Fireman you'll have the ammunition. But I make no bones about it, I can't deal with specifics. I can't do it. It would be wrong of me to do it. And I'm sure you're intelligent enough people to appreciate that . . .'

Coda

The research for the radical humanist paradigm demonstrates how Fire Service training instructors use administrative science to solve a set of recurrent problems about the authority structure, problems whose solutions are pre-determined in hegemony of the organization. The analysis illustrates the ways in which the dominant culture of the organization is reproduced with the help of 'acceptable' theories of management.

Case Review

In the radical humanist study, we find a different mode of explanation again. Although this paradigm, like the interpretive paradigm, views the social world from a perspective which is nominalist, anti-positivist, voluntarist and ideographic, it is committed to defining the limitations of existing social arrangements. A central notion is that human consciousness is corrupted by tacit ideological influences. The common-sense accorded to hegemonic practices such as management training is felt to drive a wedge of false-consciousness between the known self and the true self. The

fieldwork for the radical humanist study shows how firemen not only create social arrangements but also how they come in turn to experience them as alien, especially in respect to the power dimension which underpins the construction process. The research notes how the hegemony of the organization is dependent upon the reproduction of social arrangements which serve to constrain human expression.

The Radical Structuralist Paradigm

Having analyzed the work organization from the functionalist, interpretive, and radical humanist paradigms, the research programme moved finally to the radical structuralist paradigm and to a study of the labour process in firefighting.

For contributions to this paradigm, Burrell and Morgan cite the Mediterranean Marxism of Althusser and Colletti, the conflict theory of Dahrendorf and Rex and the historical materialism of Bukharin. Burrell and Morgan develop a duality of traditions to show the influence of Marx's work on political economy and the more radical implications of Weber's work on bureaucracy. This duality is later developed into a formal framework for assessing contributions to a 'radical organization theory'.

For radical Weberian approaches, Burrell and Morgan list works such as Eldridge and Crombie's (1974) *A Sociology of Organizations* Mouzelis's (1975) *Organization and Bureaucracy*, and Miliband's (1973) *The State in Capitalist Society*.

For Marxian structuralism, Burrell and Morgan cite Marx's *Capital* as an exemplar for the analysis of economic systems. In this tradition Baran and Sweezy's (1968) *Monopoly Capital* and Braverman's (1974) *Labor and Monopoly Capital* are referenced as two important works for labour process theory.

Following Braverman's (1974) seminal work, the major thrust of research in this paradigm has been a revival of labour process analysis. In the wake of *Labor and Monopoly Capital* we have seen a wealth of case study work linked to Braverman's original de-skilling thesis (see Zimbalist 1979; Nichols 1980; Wood 1982). In recent years the scope of this research has widened to incorporate issues such as post-Fordism, the sexual division of labour and Capital's use of time (see Piore and Sabel 1984; Dex 1986 and Nyland 1989, respectively). Much work in this area has concerned longitudinal studies and especially craft histories. Following criticisms that Braverman's analysis peddles 'managerial determinism', many writers have stressed voluntarist initiatives by labour within a control-resistance dialectic (Gospel and Littler 1983; Storey 1983; Thompson 1983).

The Research

Given these developments, a labour process study of firefighting was chosen as the research topic for the radical structuralist paradigm. The

focus was placed upon the development of employment relations in British firefighting, and especially 'the struggle for a normal working day' (Marx 1867).

Research into the history of British firefighting found working time to be the most contentious issue in contractual negotiations between the Trades Union, the Employees and the State (Blackstone 1957, Fire Brigades Union 1968). The radical structuralist research subsequently documented changes in the duration of the working period from the start of full-time firefighting in Britain in 1833 to the last major change in the duty system, which followed the Firemen's strike of 1977–1978. In explaining such changes the analysis took recourse to a sectoral assessment by way of fiscal crisis theory (O'Connor 1973). Recent contractual issues were pictured against the backcloth of rapid increases in militant state sector unionism during the 1970s. The research described how the experiences of firemen were mirrored by workers in other state service sectors (see Cousins 1984 on this point). The study outlined the mechanisms devised to redress such expressions of conflict, which in the Fire Service meant the development of an 'upper quartile' agreement following the 1977–1978 strike. This agreement provided a fixed payment level in relation to workers in other service and manufacturing sectors.

Examples from the Data

The analysis suggests that as working hours for firemen have approached the national average, questions of 'productivity' have increasingly come into focus, even though firefighting is regarded as a 'non-capitalist state apparatus' (Carchedi 1977). During the 1970s when the length of the Firemen's working week came into line with other manual occupations, the emphasis was displaced from 'covering' to 'using' time. In suggesting that Firemen's pay should be assessed in relation to a normal working week, the Cunningham Report (1971) pointed to the scope for better manpower utilization within non-operational periods of the working day. The recommendations of the Cunningham Report were in line with those of the earlier Holroyd Report (1970) which recommended improving productivity by replacing 'unskilled' cleaning work with 'skilled' inspection work. In future, many unskilled tasks would be carried out by auxiliary cleaners and porters, both employed on low incomes.

Moreover, the reduction to 42 hours was contingent upon a move to greater 'professionalism', which would see stand-down periods reduced. Previous systems had allowed not only for statutory evening stand-down from 8.00 pm (with some variations), but also free time on weekend rotas from mid-day on Saturday and all day Sunday. With the 42 hour system, weekend stand-down was officially pushed back to midnight. During the working day itself not only was inspection work to be increased but also training schedules were made more sophisticated, with elaborate (itemized) quota inventories devised for daily drills and a yearly training plan required for each firefighter. Since the 1978 agreement, Station Officers have been encouraged to cover three hours drill on every day

shift, with usually 1–2 hours being allocated to practical training and the remainder to a technical session.

Therefore we see that as Firemen's working hours are reduced to a figure approaching that of other manual occupations, measures have been taken which at once enhance management's control over the work process whilst yielding greater productivity from the working period. As a result of the first, we see an increased formalization of roles and more tightly controlled work, while for the second, the upskilling of core workers plus the employment of unskilled peripheral groups.

Coda

The radical structuralist research has shown that as firefighting represents (historically) 'unproductive' (Carchedi 1977) labour it has been in the interests of Employers to maintain a long working week. It was only during the 1970s, with the development of a national duty system comparable in duration to that of other manual occupations, that questions of 'productivity' became important. The intensification of labour that was the result of this process was achieved through completing more highly skilled work within the time available.

Case Review

In the radical structuralist study we return to a realist perspective, but one directed at fundamentally different ends to those of functionalism. In this paradigm, the focus is upon instances of structural conflict rather than functional integration. The study analyses the strategic relations between Capital and Labour, especially with regard to the development of the employment contract. The research highlights crisis points in the firefighting labour process, and describes the role of State agencies in seeking to mediate contradictory forces and restore system equilibrium. Instead of examining the reproduction of hegemony, the radical structuralist study illustrates the concrete actions of Labour, Capital and the State in the labour process.

Conclusions: Reflections on the Problems of Practice

The Fire Service study represents a first attempt to develop a multiple paradigm analysis of work organization. The research has examined some of the empirical possibilities arising from models of paradigm heterodoxy in order to demonstrate how differing frameworks contribute to our understanding of organizational behaviour. We have illustrated how contrasting images of the subject matter emerge when we base our investigations upon incommensurable sets of meta-theoretical assumptions. In the present case, the result has been four studies yielding alternative 'images of organization' (Morgan 1986).

This research is not, however, without its shortcomings. Problems have

been identified with both the theory and practice of multiple paradigm research. Five issues of particular concern are as follows.

A first problem was encountered during the access negotiations. The researcher was faced with the dilemma of being convinced of the validity of the research exercise yet fearing that the host organization might not see the virtue in some of the studies to be undertaken, especially those for the radical humanist and radical structuralist paradigms. Forsaking normal ethical considerations, only a partial explanation of the project was presented during these negotiations. The programme was described in exclusively functionalist terms, with no mention being made of plans to conduct phenomenological, existential or Marxist investigations. Although the topic areas were discussed — motivation, work design, training and industrial relations, with the exception of the motivation study (functionalist paradigm), few theoretical details were presented. It could be claimed therefore that, as the researcher engaged in a form of deception over the disclosure of objectives, the ethics of the work undertaken can be questioned. This would suggest that for any future multiple paradigm research such disclosure issues should be addressed in an ethical way from the outset.

A second methodological issue concerns the relationship between the subject matter and the modes of analysis. It could be argued that despite the problems outlined earlier, a more powerful methodology would have seen a single topic investigated rather than, as in the present case, four discrete topics. Such a methodology may have yielded some fascinating cross-paradigm interpretations and, as a result, served to counteract the kind of absolutist analysis found within the pages of, for example, *The Administrative Science Quarterly*, *Omega* and *The Academy of Management Journal*. Although, in theory, such a methodology would contribute to the development of a more reflective organization theory, in practice, it is unlikely that an empirical research programme can be accomplished.

A third problem relates to the degree of pragmatism employed in the research design process. With four studies to complete in a relatively short research period (of two years), and thus with pressure to start the fieldwork quickly, topics were allocated to paradigms on the basis that similar associations had proven successful in the past. Although reference to empirical exemplars seemed defensible on practical grounds, this denied an opportunity to explore the methodological limits of the four paradigms and to consider research issues other than those identified by Burrell and Morgan. We would suggest that any future multiple paradigm investigation should adopt a less pragmatic approach to research design than that adopted here. This should allow for greater methodological freedom in research design.

A fourth issue concerns the direction the research journey has taken through the paradigms. The author feels that if a similar exercise were considered in the future it would be better to take a different empirical route. Instead of replicating the clockwise progression of Burrell and

Morgan, the whole range of paradigm routes should be considered. Above all, any future researcher should assess the specific needs of the investigation before deciding upon an empirical itinerary. The present programme, for example, would have benefited from starting in the interpretive paradigm rather than the functionalist. A more appropriate course would have been to examine the interpretive, the radical humanist, the functionalist and the radical structuralist paradigms in that order. This progression would have facilitated the systematic accumulation of data from micro to macro levels of analysis, whilst including opportunities to criticize and re-interpret the methods and findings. For any future investigation, this methodology would help build a more generic organizational analysis. Such a methodology would avoid the mistake made in the present research where a psychometric analysis of work motivation (functionalist paradigm) was completed before a qualitative understanding of the work organization (interpretive paradigm) had been obtained. The author's experience was of only beginning to understand the meaning of work motivation in the Fire Service *after* the psychometric analysis had been completed!

Finally, an issue related to the above, but of more general concern is whether a paradigm is ideally suited to the analysis of a particular topic or whether it can assess any topic. While we have not addressed this issue formally, and while the author is aware of the socio-philosophical debates linked to this issue (see Hassard 1988), one may suggest that, in practice, the solution will lie in developing a typology or contingency model which specifies appropriate combinations of topics, methods and paradigms. The research described here supports such a proposal, for it suggests that each of the Burrell and Morgan paradigms is limited in its methodological scope. Thus the author feels it is wrong to assert that any paradigm can or should be used to assess any issue. This argument should be discounted on empirical grounds, because we cannot address certain topics from certain paradigms, and on methodological ones, because it draws us towards the black hole of pure relativism.

In conclusion, despite the methodological problems outlined above, paradigm heterodoxy holds many benefits for organizational analysis. Multiple paradigm research, if operationalized successfully, may allow us to learn the languages and practices of a wide range of academic communities and in turn to develop analytic skills representative of their forms of life. Through refining such a poly-paradigm methodology we may be able to realize epistemological variety in our studies of organization. Such a spirit of pluralism may indicate a move towards greater democracy in organizational analysis.

Note

*The research for this paper was sponsored by the Economic and Social Research Council (ESRC). The author would like to thank Gareth Morgan (York University, Ontario) and Stephen Procter (Keele University) for their comments on an earlier draft of the paper.

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