Unions and Information, Britain 1900–1960: An Essay in the History of Information*

ALISTAIR MUTCH

SUMMARY: This article examines the use of information by British trade unions to react to occupational change. Using a case study of the response to welding by the Boilermakers' Society, it looks at the barriers that prevented the use of information. It then examines the rise of trade union research departments. This leads to an outline of a framework for looking at the ways in which trade unions used information, based on their attitude towards their environment. The article suggests that an "information perspective" is a useful supplement to existing ways of examining trade union history which may shed new light on their development.

INTRODUCTION

In a room in the Working Class Movement Library, Salford, England, in 1998 were piled high dozens of musty volumes. These volumes, many several inches thick and all bound in gold stamped covers, were returns from branch secretaries of the Amalgamated Engineering Union (AEU)[1] to central office covering the years from the First World War to the end of the 1950s. There were quarterly, half year and annual returns, all carefully filed by branch within regional order. The sheer volume of paper generated by the large number of branches meant that each half-yearly return resulted in four hefty bound volumes. These volumes contained both summary financial statements and details of new and expelled members. In the latter categories the branch secretary entered the date of inclusion or exclusion, the member's name, the trade, the class of membership and, in the case of new members, marital status. (Although many secretaries ignored this in practice.) For

---

1. The Amalgamated Engineering Union organized skilled and later semiskilled general engineering workers in Britain and some of its colonies. It emerged in 1921 from the initiative of the Amalgamated Society of Engineers from an amalgamation of seventeen independent unions. With a membership of nearly half a million, it was one of the most influential unions in the British labour movement.

expelled members, the date of joining and the reason for exclusion appeared. Now, this enormous volume of data represents a number of things. For the archivist the challenge is to determine what should be kept, given scarce resources and the inevitable ravages of time. For the assiduous historian, there might be something of value to be mined from the data: changing patterns of occupational recruitment, for example. However, perhaps the more significant question from an historian's point of view might be to ask why this huge volume of data was collected and what, if anything, was done with it?

The short answer, in the context of the AEU, was that the data was summarized and that some of it appears in tabular form in the equally voluminous annual reports. However, only a tiny fraction of the data appears to have been used in this way. The collection of the data was obviously a means of controlling and monitoring the activities of the branch secretaries, but was it used for any more creative and strategic purposes? This sort of query was prompted by experience, outlined in more detail below, with using the records of the Boilermakers' Society to trace the development of the trade of welding. There, too, large quantities of data were recorded, but the observation would be that, despite having this data to hand, the union appeared not to use it to prompt it to respond to significant changes in its environment. Such observations have stimulated an interest in the way in which unions used information. This essay attempts to deal with such issues. In many ways its primary purpose is to be an exploration in the history of the use of information. However, given that information always has to be seen in its context, an examination of its use in specific historical contexts can also shed new light or give us new ways of looking at the broader purposes and actions of organizations such as unions. The paper begins with a consideration of possible approaches to the history of information. This is then followed by a detailed examination of the use of information in one particular union, the Boilermakers' Society, to trace the development of one particular trade, welding. The frame is then broadened out to consider one particular aspect of information use in unions, the (slow) growth of research departments. Special attention is paid here to the experience of the Iron and Steel Trades Confederation, the first union to establish a research department. The paper then concludes with some comments about the potential of using the theme of information as a means of historical investigation.

THE HISTORY OF INFORMATION OR INFORMATION IN HISTORY?

The growing use in practice of information technology and its influence on a wide range of disciplines has seen a small but growing interest in the way

in which information has been used in history.[2] This has been perhaps strongest in accounting history, reflecting the pre-eminence in many organizations of accounting as the predominant formal information system. Work in this area has been valuable in correcting some of the very ahistorical work that lies behind concepts such as the "information society".[3] Whilst focused initially on changes to accounting standards, it has now moved to look at the use of accounting information in practice.[4] However, there are a number of drawbacks to such accounts. They tend to focus on formal information systems, particularly those based on number. Such systems, whilst important, are only part of the wide variety of types and sources of information available to individuals and organizations. They also tend towards what Oyama has termed a "preformative" approach to information, that is, an approach, particularly influential in the natural sciences, which sees information as inert, ready to be discovered.[5] This property in the natural sciences is often paralleled in the definition of information within economics, where a mass of complexity is reduced to a particular number, usually price, which is then said to convey meaning in itself.[6] This sort of approach reaches its apogee in Beniger's celebration of reductionism when he argues that:

> The rise of the Information Society, more than the corresponding development of information theory, has exposed the centrality of information processing, communication, and control to human society. It is to these fundamental processes and not to any particular level in the hierarchy of living systems that we might hope to reduce our accumulating knowledge of human organization and society.[7]

This is not the place to rehearse the arguments against reductionism as a philosophy, impressive though its results might be as a method in some of the natural sciences.[8] However, what is of central importance is the role of context in aiding, changing or distorting the meaning of information. Given this, it is arguably not helpful to talk about a history of information, but rather it is more productive to look for histories of the use of information in particular historical contexts. This suggests that there might be more

---

2. Alistair Black, "Lost Worlds of Culture: Victorian Libraries, Library History and Prospects for a History of Information", *Journal of Victorian Culture*, 2 (1997), pp. 95–112.
3. Frank Webster, *Theories of The Information Society* (London, 1995).
4. Margaret Levenstein, *Accounting for Growth: Information Systems and the Creation of the Large Corporation* (Stanford, CA, 1998).
5. Susan Oyama, *The Ontogeny of Information: Developmental Systems and Evolution*, (Cambridge, 1985).
6. Hilary Wainwright, *Arguments for a New Left: Answering the Free-Market Right* (Oxford, 1994); Mark Casson, *Information and Organization: A New Perspective on the Theory of the Firm* (Oxford, 1997).
7. James Beninger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, MA, 1986), pp. 105–106.
8. Steven Rose, *Lifelines: Biology, Freedom, Determinism* (Harmondsworth, 1997).

value if we adopt an approach to information which sees it as a process of meaning creation. In Boland's words, information "is not a resource to be stockpiled as one more factor of production. It is meaning, and can only be achieved through dialogue in a human community. Information is not a commodity. It is a skilled human accomplishment."[9] Such dialogues, of course, take place in particular contexts. The problem is that another influential set of accounts, those based on Foucauldian notions of discourse and the knowledge–power couplet have been found wanting when applied to the historical use of information.

We have seen that Beniger wants to reduce complex matters of social life to issues of information. In analyses which draw upon the knowledge–power discourse we run the risk of losing track of information/knowledge altogether in the all-pervasive influence of power. This has the impact of making it difficult to analyse the constituent parts of the processes in which information is used and created. It also, as Bayley, argues, tends to reduce the power of human agency, as human actors become playthings of discourses, rather than active creators of meaning in processes of resistance and accommodation.[10] The focus of such accounts on the impact of discourse in local settings, Levenstein contends, "has limited the usefulness of this line of research in understanding *patterns* of change over time. There is also a conscious de-emphasising of the common competitive pressure that firms in a capitalist economy face."[11] These criticisms suggest that we need to turn elsewhere for useful approaches.

Bayley's account of information gathering in nineteenth-century India draws upon Castell's notion of an "information order". This is an analytical device used to help frame investigations, to suggest that there are particular ways in which the creation and use of information are formed in particular contexts. For Bayley, "It is not separate from the worlds of power or economic exploitation, but stands both prior to it and dependent on it. It can be considered to have a degree of autonomy from politics or economic structure."[12] The degree of such autonomy and the reciprocal influence of these different levels of structure is a matter of empirical investigation, rather than of *a priori* fiat. This approach parallels that taken by MacDonald, who uses the notion of an "information perspective" to analyse situations ranging from innovation in British nineteenth-century agriculture to the failure of science parks in twentieth-century Australia.[13] He contends that "sweeping

9. Richard Boland, "The In-formation of Information Systems", in: R. Boland and R. Hirscheim (eds), *Critical Issues in Information Systems Research* (Chichester, 1987), p. 377.
10. C.A. Bayley, *Empire and Information: Intelligence Gathering and Social Communication in India, 1780–1870* (Cambridge, 1996).
11. Levenstein, *Accounting for Growth*, p. 5.
12. Bayley, *Empire and Information*, p. 4.
13. Stuart Macdonald, *Information for Innovation: Managing Change from an Information Perspective* (Oxford, 1998).

assertions that information is everything do not actually allow information to be anything in particular".[14] His argument is that we need to supplement and complement existing approaches with a focus on the role of information. He shows that information can usefully be considered of as packages, blended and mixed by those who use it to extract meaning. In this, he emphasizes the importance of informal mechanisms and in particular the notion of information transactions. These work most effectively, he suggests, when there is reciprocal exchange.

These perspectives are far more useful in analysing concrete situations than either the reductionism of the information-processing approach or the discourses of the Foucauldians. However, they still do not specify the features of the process of information creation in enough detail. The approach in this paper is one which draws upon the insights provided by Bayley and MacDonald and applies them to notions drawn from the work of those working in the tradition of critical realism, notably Archer.[15] This work has been used to create a model which argues that in any context we will need to look at the images of information available to organizational actors, images which can be at a number of levels.[16] These notions of what might legitimately constitute information are mediated by organizational and technological resources. However, we also have to bear in mind the cognitive limitations of both individuals and groups. We can also usefully bring in the notion of organizations as "interpretation systems".[17] In this model, the sort of interpretation an organization engages in is conditioned by two dimensions: by the assumptions that it has about its environment and by the degree to which it intrudes into that environment. Figure 1 overleaf suggests that organizations which, for example, assume that there is little that they can do about their environment, either to analyse or to change it, will, on this model, engage in "undirected viewing".[18] The model is clearly aimed at understanding business organizations but, with appropriate modifications, it may be a useful device in looking at the ways in which trade unions used information. For the present, however, we turn to explore some of the issues in a little more detail by examining a particular historical case, the use (or rather lack of use) of information by the Boilermakers' Society in responding to the emerging occupation of welder.

---

14. *Ibid.,* p. 281.
15. Margaret Archer, *Realist Social Theory: The Morphogenetic Approach*, (Cambridge, 1995); *idem, Culture and Agency: The Place of Culture in Social Theory* (Cambridge, 1996).
16. Alistair Mutch, "Information, a Critical Realist Approach", in: Tom Wilson (ed.), *Proceedings of the 2nd Information Seeking in Context Conference* (London, 1999).
17. Richard Daft and Karl Weick, "Toward a Model of Organizations as Interpretation Systems", *Academy of Management Review*, 9 (1984), pp. 284–295.
18. *Ibid.*, p. 289.

	UNDIRECTED VIEWING	ENACTING
Unanalysable	Constrained interpretations. Non-routine, informal data. Hunch, rumour, chance opportunities.	Experimentation, testing, coercion, invent environment. Learn by doing.
ASSUMPTIONS ABOUT ENVIRONMENT	CONDITIONED VIEWING	DISCOVERING
Analysable	Interprets within traditional boundaries. Passive detection. Routine, formal data.	Formal search. Questioning, surveys, data gathering. Active detection.

	Passive	Active
	ORGANIZATIONAL	INTRUSIVENESS

Figure 1. *Model of organizational interpretation modes*

INFORMATION, WELDING AND THE BOILERMAKERS' SOCIETY

Welding[19] as an occupation begins to appear in the early years of the twentieth century, gaining pace and significance in the 1930s.[20] The main union affected by these changes was the Boilermakers' Society,[21] but when we look

19. Whilst there are many welding techniques, for our purposes we can make a distinction between resistance and fusion welding. The former, involving the fusing of metals by the local application of electrical current, was developed in the early years of the twentieth century and was rapidly taken up in assembly work, at first for household articles but most notably in the developing automobile industry. It is distinct from fusion welding not only in its rapid adoption in manufacturing but also, and most importantly in this context, its semiautomatic character. From its beginnings it was a technique which lent itself to automation and it was never more than a semiskilled job. This ease of automation was later to lead to the widespread use of robots in places such as car body assembly plants. In fusion welding, two metal parts are heated and fused, in many cases with the addition of filler metal. Different techniques are needed to weld different thicknesses and types of metal, but these can be classified into two: gas and electric arc. Both of these were invented in the closing years of the nineteenth century, but they had very different trajectories of adoption and diffusion. Gas welding stemmed from the discovery of techniques for making oxygen and then acetylene. The combination of these two enabled the development of cutting and welding technology, spurred on by increasing success in bottling gases. The portability of the equipment meant that it was widely adopted in the years immediately preceding the First World War as a repair technique. This widespread adoption hindered the take up of the much more flexible electric arc techniques.
20. Alistair Mutch, "The Impact of Information Technology on 'Traditional' Occupations: The Case of Welding", *New Technology, Work and Employment*, 13 (1998), pp. 140–149.
21. The Boilermakers' Society was the classic craft union of nineteenth-century Britain. It organized those involved in the construction of heavy engineering products such as ships and railway locomotives. Emerging in the 1830s, it consolidated its position under the leadership of Robert Knight in the 1870s and adopted a position fiercely defensive of its craft traditions. Its determination to defend its members' existing position led it into conflict with other unions of both the skilled and the unskilled. Internally, it tended towards a centralized form of decision making, although with the employment of all-member referenda on crucial issues.

at its response to the new occupation through the medium of its records a contradiction emerges. This contradiction can be seen in the juxtaposition of the following from the official union history, discussing welding in the context of a letter from the Executive Committee to all branches in 1933, "a new development which ultimately was profoundly to affect the membership of the Society. It was the development of the burning and welding of metal plates",[22] and the following extract from an EC minute of 1909 in which the secretary of the Aberdeen branch in Scotland "asks advice re who should use Welding Lamp". The response to this was that they should approach the district delegate and "keep him well informed".[23] We appear to have a situation in which the organization had information but failed to act upon it, which necessitates an examination of the way in which the Society collected and used information.

The main channel for the transmission of information was the *Monthly Report* to members, supplemented by the *Annual Report*. These reports, circulated to all members, contained a wealth of data but, in a strangely contradictory fashion, very little information. One contextual comment before looking at the content of the reports in more detail, was their extremely conservative nature. Their essential features remained broadly unchanged from 1900 to 1960. To be sure, there were changes in visual design, although these too were hardly radical in character. Above all, the reports were dominated by lists: lists of members admitted, members "run out", members whose status was in jeopardy, members to whom benefit had been paid. These occurred each month and were supplemented annually by details of branch membership and lists of addresses of employers. There was very little summary data, but rather lists which ran to several pages. These lists overwhelmed such comment as was contained – in January 1960, for example, two pages of comment from the general secretary compared to twenty-six pages of notices and lists. The report was used, therefore, predominantly as a means of communicating administrative details to local officials and, presumably as an open control over such officials. In an era when local officials were responsible for collecting often large sums in aggregate, transparent provision of information provided some measure of control. Thus, audits of branch membership were published in detail in the report, categorizing performance from "very good" downwards. Monthly returns were expected from each branch and lists of late and absent reports were printed by branch with a reminder that a fine was payable in each case. The reports were also used as a way of communicating with local officials. In January 1960, for example, it was requested that "would Secretaries please examine the list of Boilershops and Shipyards, etc., as given

22. J.E. Mortimer, *History of the Boilermakers' Society*, vol. 2, (London, 1982), p. 229.
23. "Minutes of the Boilermakers' Society EC", 23 August 1909, Working Class Movement Library (hereafter, WCML), Salford.
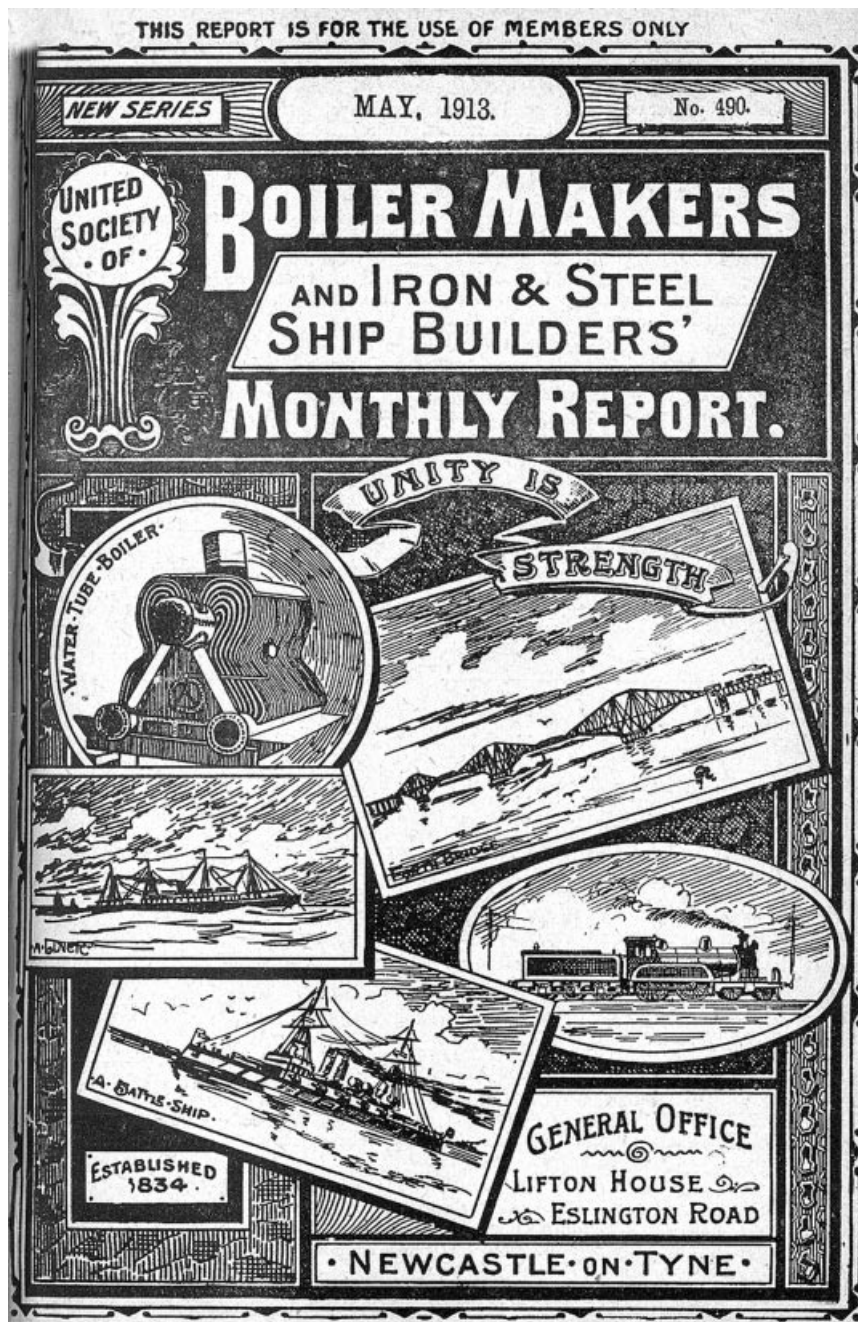
Figure 2. The cover of the *Monthly Report* for May 1913 shows the range of industries in which the Boilermakers' Society organized.
Working Class Movement Library, Salford, England

on pages 68 to 79 of the Annual Financial Report of 1958, and submit any necessary changes to Head Office, so that the list may be accurate and up to date".[24]

What is striking about these reports is how much data was contained in them which would give valuable information about employment trends. The list of members admitted, for example, contained the trade for each member, but no summary of this data was given. Whilst there were lists of members by branch, classified by class of superannuation benefit, in each *Annual Report*, no attempt was made to give corresponding occupational data. That such an analysis might be possible was indicated by the appearance in the corresponding annual reports of the AEU for the 1930s of summary data for occupational classifications (including welders). It is indubitable that such an analysis would be greatly aided by the use of technology unavailable at the time, but the data had already been collected and the labour required to present it in each *Monthly Report* must have been extensive. One concludes, therefore, that the primary barrier was not technological; what then might it have been?

One would want to acknowledge at the outset that it is very much easier to detect trends with hindsight. It might not appear at all clear that the development of a particular occupation would have the sort of impact that welding did. The initial response was to accommodate the new occupation to existing patterns of work and, in particular, to attempt to replicate the sort of work-loadings that riveting used. Thus, in the Bristol Channel Ship Repair rules for 1928 it was stipulated that: "The Lamp to be used on ship and boiler repairs by three Journeymen, but senior Apprentices may operate the Lamp in the Shop in the cropping of plates and bars for Platers' work and upon plant repairs."[25] Lower numbers could be used on low-value work but "in all other cases of jobs on which the Lamp is to be operated, the number of men to be engaged shall not be reduced below the number that would be required were the Lamp not used". Recognizing that it might be difficult to hold this line, the rules also contained the proviso that "when Riveters, Platers or Caulkers are not available, Holders-up may use the Lamp, but must be paid Riveters' rates". The minutes of the South Wales District Committee reflected the intense difficulty that the Society had in enforcing a rigid interpretation of these rules, so they also reflected an alternative strategy: "it is also agreed that complete liberty of access for the practice of the Lamp will be given to all members of the Boilermakers' Society". This realistic recognition that it was unlikely that welding could be forced into the mould of riveting inevitably brought the Society into conflict with others who would also be looking to use the new technology.

24. Boilermakers' Society *Monthly Report*, January 1960, p. 6, WCML.
25. Working Rules and Conditions, Bristol Channel Ship Repairing, 1928, p. 16, WCML, 331 881238 F200 Box 2.

As we saw above, the use of welding was likely to have an impact on several trades. This is nicely captured within shipbuilding by the following from a Communist Party pamphlet of 1945:

> All trades are affected by the extension of the welding process. Some gain, others lose. For example, blacksmiths who did all their welding on the fire, are now finding much of their work being done by electric welding. That means a loss of work to them. On the other hand the ship plumbers who substituted welded flanges on pipes for riveted flanges before the last war are now making up all kinds of fittings such as chests and valves etc., which were previously made of cast iron, thereby taking work away from the moulders. That in turn affects patternmakers, so we can see how large scale introduction of welding brings about many changes in the industry.[26]

This widespread impact brought unions, particularly the engineers' and the boilermakers', into regular conflict at local level. However, this conflict does not seem to have had the impact of stimulating discussion at EC level. Again, this was not due to a formal lack of information flow. The minutes of the South West District Committee were full of references to the problems caused by welding in the early 1920s.[27] The minutes of district committees were sent for scrutiny by the EC, so there was the opportunity to pull together local practice and formulate some sort of strategy. Why did this not appear to happen in any consistent manner, and certainly not until well after the trade was becoming established at local level?

The nature of the EC minutes give us some clues. One has to recognize that minutes are often a very partial view and that they only record formal proceedings. However, even given these caveats, it is striking that the minutes are dominated by appeals over the administration of the benefits process. The scrutiny of DC minutes carried out also reflects this concern with the detail of the benefits process. In turn one might want to relate this to not only the nature of the Society as a craft union demanding fairly high levels of subscription and paying significant levels of benefit, but also to the tension between local areas and the central organization. This was particularly marked in the different approach to industrial relations espoused in particular on Clydeside, Scotland, which was at odds with the very conservative and cautious approach taken by the Society as a national body.[28] Policy-making in practice was split between local districts and the general secretary: the union had, until 1952, no policy-making body such as an annual conference, tending instead to using referenda of the entire membership. This meant that policy issues such as those which might be entailed

26. Finlay Hart, *Demarcation and the Shipbuilding Trades*, Communist Party pamphlet (London, 1945), p. 7, cited in John Foster, *The Politics of the UCS Work-In* (London, 1986), p. 136.
27. E.g., 25 June 1921, 16 July 1921, 23 July 1921, 3 September 1921, 19 September 1921, 8 October 1921, 2 November 1921, 12 November 1921; South Wales District Committee Minutes, WCML.
28. Foster, *UCS Work-In*, p. 146.

Figure 3. Tyne District Committee of the Boilermakers' Society, 1907. The conservatism and craft pride of the opinion formers in the union is displayed in their dress.
Working Class Movement Library, Salford, England

by long-term occupational change were simply not open to debate. In such a context, there would be no need to focus on processing data which might have informed such a debate. The failure did not go unnoted by critics. In 1950 James Kelly of Dundee, Scotland, made the failure to collect and share information a central plank of his attempt to gain a seat on the Executive Council. "Vital questions arising from the new methods," he argued, "in the main are handled by local officials and rank and file members, information on how work is allocated in other districts seldom reach us."[29]

There is also the issue of those who were the opinion formers within the Society. Work in cognitive psychology indicates that there is a powerful tendency for both individuals and groups to assimilate new knowledge to their existing preconceptions.[30] We cannot at this stage enquire into individual psychologies, but their occupational backgrounds might, it could be argued, tend to encourage them to assimilate new information to existing patterns. There was something of a tension here between the significance of

29. *Monthly Report*, November 1950, p. 11.
30. Irving Janis, *Groupthink: Psychological Studies of Policy Decisions and Fiascos* (Boston, MA, 1982).

the riveter as the core of job controls at the local level and the occupational background of those involved in union affairs. That the Society regarded occupation as central is reflected in the lists published in the Annual Report of members holding public office. These carefully list not only the bodies served on, but also the members' trades. In 1940 three-quarters of those listed were either riveters or platers, at a time when they formed fifty-six per cent of the union's admissions. Riveters continued to supply twenty-two per cent of such members in 1950, even when the number of new admissions was down to eleven per cent. This represents an inevitable lag, with new admissions likely to be apprentices who would not have built up either the experience or the credibility to serve on public bodies. It is likely, however, if this pattern is repeated inside the union that such members would be likely to view the world through well-formed views of what an occupation should consist of.

The way in which such views might colour approaches to the information which analysis of the occupational data might yield, and the broader resources which might be drawn upon, is nicely illustrated in the following poem, declaimed by a Clydeside foreman riveter:

> Alas the riveter's day is growing dark
> They build ships now with a spark
> That welder [spits] that's come to take his place
> He couldn't even tie a riveter's lace.
> Welders, from whence do they come?
> If you think from the shipyard you must be dumb.
> They come from the bookies, the byre and the barbers,
> Grocers and butchers the job also harbours.[31]

The response to welders here draws upon not only an initial suspicion or concern about change but upon deeper resources, specifically those about the nature of masculinity and the nature of the "skilled man". One is not suggesting here that these men were "playing" at being skilled men, as Thompson argues in connection with car workers in Coventry, England, but the argument here goes beyond such skill as might objectively be required for the job.[32] Indeed, More points out that riveting required tremendous physical exertion and a consistency of execution born of experience, but, one might argue, relatively little skill. The riveters' position in the yards was born out of respect for their physical exertions and their fierce defence of job controls. However, it is possible to argue that welding required a higher level of individual skill, given that, as More argues, "because the strength of a ship depended on its design rather than on each

---

31. From *Clydebuilt*, a BBC Scotland TV documentary, 1994.
32. Paul Thompson, "Playing at Being Skilled Men – Factory Culture and Pride in Work Skills Among Coventry Car Workers", *Social History*, 13 (1988), pp. 45–69.
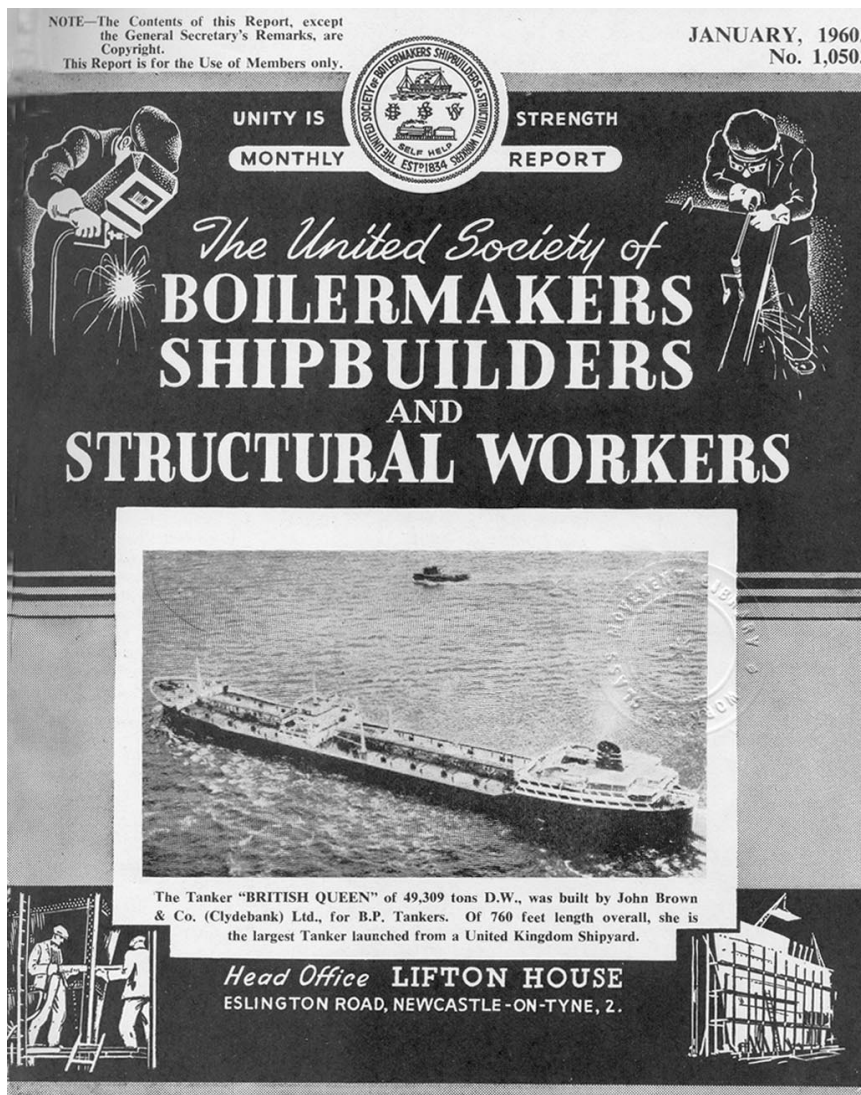
Figure 4. Front cover of a *Monthly Report*, 1960. Welders have made it on to the cover, but shipbuilding remains the dominant focus.
Working Class Movement Library, Salford, England

individual rivet, ship-riveting could be done to relatively low standards", whilst a weld was more critical.[33] The attack is therefore on welders as something alien to the shipyard, which is ironic as riveters were deliberately drawn from either Ireland or the Scottish Highlands when iron shipbuilding originally developed. However, their alien nature is not primarily geographical, but in lying outside the approved ranks of what constituted a manly trade. Thus a man would be involved in hard physical labour, but this would not be sufficient. They would be more sophisticated than the farm worker in the byre, but not to the extent that they might be considered morally suspect, like bookies and barbers. Such attitudes might conceivably prevent a balanced and forward-looking view of how to respond to new occupations, but rather tend to a bending of new data to existing occupational patterns.

Such attitudes might conceivably be reinforced by the pre-eminence of shipbuilding in the union's affairs. One can see this symbolically expressed in the front cover of the *Monthly Report*. From 1913 onwards the front cover changed from a stylized representation of the various industries represented to one incorporating a photograph. This photograph was overwhelmingly of a shipbuilding subject, the first new cover being of the launch of a ship.[34]. It would only be fair to point out that in 1956 a new cover design which incorporated a line drawing of a welder was instituted, but this still does not undermine both the conservatism of the symbolism employed and the dominance of shipbuilding in that symbolism. A further indication of the importance attached to shipbuilding is the allocation of places at the first annual delegate conference in 1952. Eighty of the 127 delegates were attached to a sector and of these the largest number, thirty-four per cent, were from shipbuilding.[35] This should be set alongside the actual patterns of membership, which indicate that shipbuilding, from being the most significant sector in 1920 at thirty-seven per cent of the membership, was undergoing a long decline even from that date, with the main increases being in general and structural engineering. Indeed, by 1950, general engineering had taken first place in terms of percentage of members, with structural engineering accounting for fourteen per cent by 1960.[36] Of course there are other factors to take into account besides overall numbers. The concentration of ship-

33. Charles More, *Skill and the English Working Class, 1870–1914* (London, 1980), p. 125.
34. In 1920 seventy-five per cent of the subjects were ships or shipyards, the remainder being union officials; in 1930 an LNER locomotive featured in the February edition, but eighty-three per cent of subjects were ships; 1940 was a little atypical, in that for half the year the front cover was put over to an advert encouraging recruitment, but five of the remaining covers featured ships; in 1950 just over half the covers were devoted to ships, with fabrication (and welded fabrication) appearing on two covers, the balance being union dignitaries; in 1960, whilst ships appear on only four covers, these are the only industrial subjects, with union officials taking the remaining places.
35. Report of the First Annual Delegate Conference, 1952, pp. 3–5, WCML.
36. Figures calculated from an analysis of branch membership data in the relevant annual reports.

building members in very large branches in a few centres would give them additional weight, as would the symbolic weight of having sustained the union through difficult times. However, one might suggest that the weight of shipbuilding and its perceived centrality to the fate of the union might cause an underestimate of the impact of welding, at least until it had started to affect work practices in the yards themselves.

Finally, one would want to set these factors in the context of general trade union practice, which was not one of thinking strategically about occupational change. This can be seen in the reports of the Trade Union Congress, which only deal with welding in so far as it became a matter of serious dispute between affiliated unions. This did not occur until after the Second World War, by which stage welding was firmly established. This reflects the tradition of not interfering in the affairs of affiliated unions, which resulted in no-one having an overview of how many welders were organized and by whom. By 1960 there were over 100,000 welders.[37] Analysis of the Boilermakers' Society records would indicate that just under half this number were likely to be members. A number of other unions may have organized the remainder, but this is impossible to determine. The consequences of both non-organization and of other issues relating to welders as a whole could not be considered in this framework.

There were, then, a number of factors involved in the contradiction between the data collected by the Society and its lack of use in strategic decisions. The data was never perceived by those who collected it as having value over and above its use of administrative and control purposes. The barriers to such perception rested at a number of levels, with technical factors being present but marginal. In part this reflected organizational arrangements, which were based on a tension between local and central organization. However, of more importance were value systems which privileged a particular image of the skilled man, an image which drew upon the symbolic and material importance of shipbuilding and, beyond that, to notions of masculinity. When these values were placed in a wider context of a tradition of non-strategic responses to occupational change, then it is hardly surprising that the data were ignored. What this analysis indicates is the importance of political and cultural factors in shaping the value systems which condition the use of information. This analysis, then, accepts the focus on interpretation systems advocated by Daft and Weick but ties this to broader structural factors. We could place the Boilermakers' Society in the "undirected viewing" quadrant of their model, but were there other unions occupying different positions? We can now broaden our perspective by looking at the wider use of information within organizations and in particular the growth of research departments.

37. Mutch, "Case of Welding".

THE GROWTH OF RESEARCH DEPARTMENTS

We might want to argue that the views on the world expressed by the leaders of the Boilermakers' Society expressed not only their own backgrounds but also those of their members. That is to say, that there is a particular craft mentality which is conservative and fiercely defensive of existing positions. In this case there is something of an occupational determinism, as expressed by Lloyd in his history of the electricians. Lloyd's argument, citing Citrine, is that the occupational characteristics of the membership shape the values and practices of the union. Citrine's argument was that:

> [...] it seemed to me to follow that a union whose members had essentially to equip themselves with a considerable depth of theoretical knowledge in order intelligently to understand their work, must apply that same sort of analytical sense to the problems of the working class. It seemed to me to be inevitable that the membership of this trade union would – without any sense of distinction or arrogance or anything of that kind – tend to be on a somewhat higher intellectual level than that of the rank and file of trade unions who were not concerned with these problems.[38]

The argument here might be that the increased theoretical knowledge of the new scientifically-based occupations would demand higher theoretical knowledge as contrasted to the more practically acquired knowledge of the traditional craftsman. Hence we might expect unions representing such members to be more advanced in their use of information and indeed there does appear to be some corroborating evidence in the shape of the relatively early creation by the EEPTU of a research department. This was established in 1939 and "its prolific output", according to Lloyd, "helped the union's leadership immeasurably in the establishment of their intellectual bona fides with the growing corporate state that was the nation at war".[39] However, this could be stretched too far as when we turn to examine the scanty history of union research departments we find that the EEPTU was a relative latecomer. The forerunner was in fact the Iron and Steel Trades Confederation (ISTC) and one of its constituents, the British Steel Smelters, Metal, Iron and Kindred Trades Association (BSSMIKTA), which established a "statistical department" in 1908 and won the plaudits of the Webbs for possessing "the most efficient office in the Trade Union world, with a real statistical department and a trained staff".[40] This union possessed characteristics which made it different from those of both the boilermakers and the electricians. It was an industrial union with highly-paid members whose skill was acquired through practical experience. Rather than being apprenticed, steel workers progressed up a tightly defined hierarchy. These

---

38. John Lloyd, *Light and Liberty: The History of the EEPTU* (London, 1990), p. 664.
39. *Ibid.*, p. 271.
40. Sidney and Beatrice Webb, *The History of Trade Unionism* (New York, [1920] 1965), p. 498.

features suggest that it is not to the characteristics of the membership that we should look. Before examining the ISTC experience in a little more depth, it may be useful to review the broader context of the development of trade union departments.

Progress in establishing research departments was slow in most unions. The most recent work on trade union officers, Kelly and Heery's 1994 *Working for the Union* points to:

> [...] the limited scale of the human resources available to British unions. Although in-house specialists may be supplemented by those employed by the TUC and by academics and consultants, [...] the modesty of specialist resources within British unions limits their capacity to train their members and representatives and imposes a constraint on the development and implementation of policy.[41]

Before the Second World War many unions relied on the TUC Research Department which separated from the Labour Party in 1926. This supported unions such as the Miners Federation of Great Britain in its submissions to royal commissions, maintained a cuttings and periodicals library and provided, "an intelligence service, as comprehensive as the limited resources of the department allow, [...] covering British and foreign Trade Union movements, employers' organizations, and general industrial and economic conditions at home and abroad".[42] By 1957, according to Wigham, most large unions had some form of research department, but these were poor compared to practice in the USA.[43] In many the situation might reflect that found by Allen in his study of Deakin and the Transport and General Workers Union. Here, information flow was dominated by the forceful personality of Deakin himself. As Allen points out, administration was often considered to be of secondary importance to recruitment. Whilst this might have some logic to it, it often meant that issues about the use of information were left to poorly-trained and overworked general officials who were not recruited for their administrative ability.[44]

This situation was, of course, a product of the historical development of British unions and it is all too easy to underestimate the scope of their achievement in being able to create and sustain mass-membership organizations. Vincent cites the graphical account of Will Thorne attempting to cope with these problems:

> I had a multitude of correspondence, vouchers, bills, etc., which were simply strewn everywhere about the office. There was no regular system of filing of any kind [...]. There were bills of every imaginable shape and size, written on all kinds

41. John Kelly and Edmund Heery, *Working for the Union: British Trade Union Officers* (Cambridge, 1994), p. 46.
42. Trades Union Congress, *Annual Report* (London, 1927), p. 261.
43. Eric Wigham, *Trade Unions* (London, 1957), p. 90.
44. V.L. Allen, *Trade Union Leadership: Based on a Study of Arthur Deakin* (London, 1957), particularly pp. 213–217, 267–268.

of paper, in pencil and ink, a large proportion of them almost indecipherable. Our
office was just one small room, with meagre and primitive furniture, where the
whole of our work had to be done, including the holding of committee meetings.
I shall never forget the sight of this room, simply covered as it was in all directions
with those papers.[45]

Just coping with these demands, especially with limited skills in reading and
writing, was a major achievement and one for which there were few pre-
cedents. It would be wrong to imagine that there were clear models which
could be drawn from other areas of activity. Littler has pointed to the
poverty of management theory in nineteenth-century Britain.[46] The unions,
alongside the major bureaucracies of the railways and the Post Office were
in fact developing new means of running large organizations in considerable
isolation from practice elsewhere. Even much later, it is a mistake to exag-
gerate the quality of the management of many enterprises, although these
might be distinguished from unions in their far greater command of
resources and narrower focus.[47] However general practice did tend to place
an emphasis on the use of great quantities of data to monitor and control
activities. In this environment, the Webbs argued, "rigidly confined to his
office, he becomes in most cases a painstaking clerk, and rises at the best to
the level of the shrewd manager of an insurance company".[48] The Webbs
also point to the other pressures that coping with large volumes of data with
limited resources produced. In the craft unions, they argued, it produced a
narrow specialization, with officials becoming expert in interpreting com-
plex data relating to a very limited range of issues. This, in turn, raised the
issue of why the data was being analysed. When this was turned into an
"objective" interpretation of complex agreements, such as those in the cotton
industry, then there were few barriers to trade union officials performing
the same duties for employers associations.[49] The answer for the Webbs was
a greater specialization of functions within unions and their model here was
the practice of the ISTC.

The iron and steel industry shared one key characteristic with the cotton
industry, but one developed to its greatest extent here, that of the linking
of wages to prices through the implementation of sliding scales.[50] Allied to
this was tight central control and policing of agreements by the union and
determined opposition to unofficial action. However, it would seem to be
wrong to posit a direct link between the information demands of the sliding

45. W. Thorne, *Life's Battles* (London, 1925), pp. 78–79, cited in David Vincent, *Literacy and
Popular Culture, England 1750–1914* (Cambridge, 1989), p. 145.
46. Craig Littler, *The Development of the Labour Process in Capitalist Societies* (Aldershot, 1982).
47. Abraham Siegel, *The Impact of Computers on Collective Bargaining*, (Cambridge, MA, 1969).
48. Webbs, *History*, p. 578.
49. Alan Fowler and Terry Wyke (eds), *The Barefoot Aristocrats: A History of the Amalgamated
Association of Operative Cotton Spinners* (Littleborough, 1987).
50. Ian G. Sharp, *Industrial Conciliation and Arbitration in Great Britain* (London, 1950).

scale and the creation of the statistical office in 1908. In practice, the information needs for the operation of sliding scales were determined by third parties as the text of a 1905 agreement makes clear: "that the average net selling price per ton realized at makers' works for steel plates [...] be ascertained by a public accountant, to be mutually agreed upon [...] the figures [...] shall be ascertained privately from the books of the following firms and certified by a public accountant who shall be pledged to secrecy".[51] The adjustments made were done in an automatic fashion following receipt of the appropriate figures, with all the debate having taken place before the agreement was struck.[52] Rather than being a direct influence, their impact may have been a conditioning one, one which placed an emphasis on the "rational" use of data to solve problems which may have an echo in the choice of the name "statistical" department. An examination of the work of the department will indicate the way in which it interpreted its task.[53]

It seems clear that this was a reciprocal impact on the activities of the department by the demands of the government. Thus we can find a letter from the Board of Trade as early as 1900 thanking the union for its supply of statistics and asking it to fill in missing elements.[54] In turn, the union wished to be aware of circumstances in order to be able to influence government policy. These interrelated factors emphasize the varied nature of employment in the industry and the lack of information at a national level. The industry was split into many different sections but the union aimed, particularly after the formation of the confederation, to influence issues at a national level. The statistical department played a key role in providing data in a structured fashion. In order to do this, it pioneered the use of regular, structured questionnaires to branch secretaries. Thus in 1922 pre-printed form "Stat 1" was sent to all branch secretaries with the explanation that:

> It is essential for the well-being of the members that the General Office should be kept posted as to the numbers employed in the occupations covered by the operations of our Society, and for this purpose I will be obliged if you will let me know on the form on the other side, not later than the last Saturday in the month, the number of persons in your branch who have been employed for the periods named or who have been working overtime, particularly at weekends, or who have been unemployed for any periods during the month. The more accurate the information

51. Arthur Pugh, *Men of Steel* (London, 1951), p. 605.
52. Sharp, *Conciliation*, p. 60.
53. It is interesting to note in this context Alistair Tough's note on the ISTC papers which indicates that "they are unusual in bulk, subject coverage and chronological span [...] the bulk of the earlier material apparently originated in the offices of the BSSMIKTA. It is also evident that the majority of the files were either compiled by, or added to and used by, the Statistical Department of the ISTC."
54. ISTC papers, 27 February 1900, Modern Records Centre (hereafter MRC), Warwick, MSS.36 L24.

the more useful and the better will it be. Reports should be sent in as to whether all your members have worked full time or not. We want a return which will cover all our members every month, whether they are working or not, and this report should be sent without fail.[55]

This data was analysed into summary tables and graphical means were used to convey key messages.[56] In some cases returns were entered into large ledgers and cross-referenced so that, for example, bar mill rates could be analysed by mill or type of product.[57] The work of the department was not restricted, however, to servicing the needs of central office. It also responded to the needs of divisional organizers who wanted to establish precedents or exemplars for changes they wished to negotiate. This was not always a smooth process. In 1949 the Number 2 division, covering Teesside, England, wanted to find out about payment methods for those workers whose Friday shift prevented them attending the wages office. The assistant general secretary responded rather loftily that: "I do not think there is any need to send out a questionnaire, as generally speaking, we are able to negotiate sensible arrangements with employers [...] it would seem that your own divisional information should be enough for the purpose you require."[58] After further debate, which made it clear that the employers in question thought that it was a broader issue, a circular was sent to other divisions and the required information summarized and transmitted. This illustrated the way in which the department could act as a valuable resource for local negotiators.

The statistics department also played a central part in communications with the wider membership, the head being for some time the editor of the union's journal *Man and Metal*. The journal also regularly carried statistical analyses from the department, but one might suggest that its influence went still further, into influencing the tone of serious self-improvement that typified the journal. This was much more than the list of membership changes that dominated the Boilermakers' Society *Monthly Report*. Rather, it had a particular message to put across, one which comprised developments in the industry, warning stories about the Eastern bloc and earnest self improvement. Thus, the journal in the 1950s carried a regular page on educational issues the tone of which can be gauged from this 1956 comment: "Rock 'n' roll has been described as a reversion to the jungle. It appears to be only one symptom of an all too large-scale descent to moronism."[59] This tone perhaps gives us some insights into the motives behind the formation of the statistical department. The steel smelters was led in its formative years

---

55. MRC, MSS.36 L24.
56. MRC, MSS.36 B80, bar chart of membership trends.
57. MRC, MSS.36 RA1, bar mill rates.
58. MRC, MSS.36 W2/3.
59. E. Green, "Current Educational Topics", *Man and Metal*, (1956), p. 183.

by John Hodge, an example of the early generation of union leaders who were particularly keen on hands on involvement in the field. When he secured a place in Parliament as member for Gorton, England, in 1906, he requested the appointment of an assistant general secretary. The man appointed was Arthur Pugh, and it was Pugh's initiative that saw the establishment of the statistical department.[60] Pugh had been branch secretary at Frodingham, England, and had won a reputation for his attention to detail in the presentation of cases. This attention was based on a ferocious appetite for hard work and, as Hodge rather condescendingly notes, a passion for administrative work:

> One great difficulty was to get Mr Pugh to go out into the country, either to speak at branch meetings or meet managers for the purpose of arranging such disputes as were at times arising. It appeared to be his chief desire to devote himself to the work of the office; we often playfully suggested to him that he should be chained to his desk.[61]

This fascination with administrative procedures was backed up by an enthusiastic programme of night school education, "his favourite subjects being economics, statistics, and the study of the German language".[62] The frame of reference acquired in these endeavours is clearly reflected in a later article, written in 1927 for the *Manchester Guardian*. In it Pugh argues that the foundations of a rational wages policy will be statistical enquiry:

> It will form the starting point of a more scientific adjustment of rewards and payments in industry from which it becomes possible to arrive at the basic wage and to determine the addition to make thereto in respect of such consideration as margins of skill, family needs, cost-of-living changes, and the increased productivity of industry. The economic and social ramifications involved in these proposals are clearly of first-rate importance, and are matters for the technical experts to deal with.[63]

What is of note here is the emphasis on "science" and "technical experts". We can see the influence of broader developments in statistical thinking on the formation of notions of information, influences which are then mediated through the particular circumstances of this particular industry.[64] If we are to look for the reasons for the early adoption of research departments as an example of information use, therefore, it is not to be found in one single variable, such as the character of the membership. Rather, we need to take account of the cultural formation of particular individuals, of the broader

---

60. Pugh, *Men of Steel*, p. 145.
61. J. Hodge, *Workman's Cottage to Windsor Castle* (London, 1931), p. 359.
62. *Ibid.*, p. 359.
63. *The Manchester Guardian*, 3 February 1927, p. 117 in MRC MSS.36 P75.
64. Donald A. Mackenzie, *Statistics in Britain 1865–1930: The Social Construction of Scientific Knowledge* (Edinburgh, 1981); M. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research* (Hassocks, 1975).

resources available to them and of the particular circumstances of the organization. In the case of the steelworkers union the important variable from an organizational point of view appears to have been its perspectives on economic organization. It would not be appropriate to describe these as non-confrontational and reactive. It was prepared, on occasion, to stand up to employers but often on the grounds, as in its opposition to internal contracting, of their perceived managerial inefficiencies.[65] Such perceptions lay at the root of the union's campaigns for nationalization, which were reinforced by the command of national data which its statistical department gave. In this, we can see some links with a dominant tradition within the electricians' union, that of an enthusiastic acceptance of the constraints of a capitalist economy. It is to this shared value system that we need to look for these unions' particular approach to the use of information.

CONCLUSIONS

This account has followed Daft and Weick in stressing the importance of the "interpretation system" adopted by each union as mediated through the value systems of senior officials. To return to their twin dimensions of the extent of perceived malleability of the environment and the organizations' intrusion into that environment, we must condition our account by an appreciation that all unions will tend to be reactive in nature, conceived as they are as primarily defensive organizations. However, there are differences in the ways in which different unions interpret the nature of their environment and their power to change it, and these differences might have an impact on the way in which information is used.

Unanalysable	UNDIRECTED VIEWING *Boilermakers*	ENACTING *MFGB*
ASSUMPTIONS ABOUT ENVIRONMENT Analysable	CONDITIONED VIEWING *Cotton spinners*	DISCOVERING *ISTC*
	Passive ORGANIZATIONAL	Active INTRUSIVENESS

Figure 5. *Model of union interpretation modes*

In the case of the Boilermakers' Society, a general acceptance of the broad parameters of the environment was coupled with a conservative defence of the status quo, with limited attempts to shape the environment. In this

---

65. Pugh, *Men of Steel*.

context, information use is limited to administrative uses. In the case of unions like the steelworkers' there is a more enthusiastic acceptance of the economic environment and a desire to shape part of it. Here, a more active approach to the use of information was taken. Of course, there is a more intransigent tradition, perhaps best associated with the miners and one that has not been covered above. However, we did note the role of the TUC in providing an information service to the MFGB and one might hypothesize that the leaders of such unions might be less concerned with constructing information about existing conditions and more in an active shaping of the environment through recruitment and confrontation. This points to the fragmentary character of the analysis presented above and suggests areas for further research.

The approach above is also inevitably conditioned by the survival of particular records and by the lack of access to the cognitive processes of the individuals concerned. However, the example of Arthur Pugh does point to the importance of broader clusters of ideas. One such cluster of ideas is that around the rise of statistics, a cluster of ideas that has resonance with notions of science and the expert. These sets of ideas, rather than any specific practices associated with other organizations, can be seen to have shaped the particular use of information in some cases. This might in turn be linked to complementary ideas on learning and development, and the use of examinations by some unions for officer selection would appear to be important here.[66] The tracing of the interrelationships between particular groups of ideas and the social actions which they suggest might prove particularly fruitful.[67] However, we must be careful not to detach individuals and ideas from the structural context in which they existed. Rather, we need a form of analysis which is sensitive to the various dimensions of social existence and which traces interrelationships in specific contexts. The account above has attempted to do this in the case of a limited number of unions. It is recognized that this account has been limited to the experience of British unions. An important influence on information use appears to be national culture, and international comparisons of practice might be informative. However it is hoped that this exploratory account has suggested successfully that that an examination of the way in which unions used information can shed new light on their development and actions.

66. H.A. Clegg, A.J. Killick and R. Adams, *Trade Union Officers, A Study of Full-Time Officers, Branch Secretaries and Shop Stewards in British Trade Unions* (Oxford, 1961).
67. See the discussion in Archer, *Culture and Agency.*