Focusing on the problem of authority, an analysis of the theories of Max Weber, James D. Thompson, and Elliott Jaques forms the basis for this proposal for improved organizational effectiveness in public schools. Basic assumptions are that modern organizations are established and operated under rational principles and subject to rational analysis, that in order to improve an organization's effectiveness administrators must act on its structure, and that in changing this structure administrators modify authority relationships between members. Thus, if fashionable but cosmetic remedies are imposed, schools' deep-seated structural problems are neglected. The organizational structure of schools can be improved by working for greater congruence with a triadic model granting each staff position, except teachers, requisitely rational authority—involving two-way accountability—over subordinates. Practical recommendations drawn from the model include: granting principals more authority; clarifying the limits of authority of intermediate assistants, thereby placing principals and teachers in more direct contact; redefining the role of vice principals as buffering principals and teachers from environmental turbulence; defining accountability relationships more clearly; implementing school-based budgeting; and improving teachers' access to principals and chief executive officers. An alternative theoretical analysis is summarized which implies that principals' main task is to buffer teachers from the disturbances of administrative bureaucracy.
Rationality, Authority and Spindles: An Enquiry into Some Neglected Aspects of Organizational Effectiveness and a Partial Application to Public Schools

by

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A psychologist, an anthropologist and an organizational analyst were engaged by the managing board of a very large and successful restaurant chain to discover why, in spite of excellent wages, fine working conditions and the high prestige of the organization, the morale of the staff was so embarrassingly low. Why did waitresses dissolve into tears, cooks stalk off in indignant huffs and managers become so upset as to summarily fire such employees?

After each of the experts had studied a sample of restaurants, they presented their individually determined conclusions to the board. The psychologist defined the problem as one of stress with overtones of sibling rivalry.

"It is during the rush hours" he explained, "that your human relations problems arise .... Psychologically speaking, we can see that the manager is the father figure, the cook is the son and the waitress is the daughter. Now we know that in our culture you don't have daughters giving orders to sons. It louses up their ego structure. What we've got to do is to find a way to break up the face-to-face relationship between them. Now one idea I've thought up is to put what I call a 'spindle' on the order counter .... It is a kind of wheel on a shaft with little clips on it so that the waitresses can put their orders on it rather than calling out orders to the cook."

The anthropologist reported next. He explained the problem in terms of conflicting value structures within the context of the Protestant Work Ethic.

"We anthropologists" he began, "know that man behaves according to his value systems. Now, the manager holds as central value the continued growth and development of the restaurant organization. The
cooks tend to share this central value system, for, as the organization prospers, so do they. But the waitresses are a different story. The only reason most of them are working is to supplement the family income. They couldn't care less whether the organization thrives or not, as long as it's a decent place to work. Now, you don't have a non-central value system giving orders to a central value system. What we do is find some way of breaking up the face-to-face contact between the waitresses and the cook. One way that has occurred to me is to place on the order counter an adaptation of the old-fashioned spindle...."

The organizational analyst appeared last.

"Gentlemen," he said, "your problem could serve as a case study in discussions of organizational effectiveness. The organizational structure in your restaurants is out of whack with the technology and thus the manager is placed in a position where he is forced to exercise his authority on less than solid grounds. What happens is that the waitresses are trying to fill their orders quickly and efficiently, while being politely attendant to other customers' needs. During rush hours this means they are constantly badgering the cooks who are faced with many different orders, but cannot easily get on with their cooking because they are not setting their own priorities and are spending too much time listening to the demands of the waitresses. What we need to do is to better insulate these two productive sub-systems from each other. This will allow both the waitresses and the cooks to get on with their own tasks and the manager can then concentrate on personnel performance within these two spheres of competence rather than the contact point between them. What I suggest is a little invention of mine called the revolving spindle...."
When the organizational analyst had left the board spent several hours discussing which expert was right. Eventually it was recognized that each had proposed the same solution. The innovation was adopted and was a great success. Soon it was copied by other restaurants and over time became recognized as the one device that served to reduce human relations problems in restaurants more than any other.

This tale was adapted from Porter's (1968) original account and it serves to introduce the three themes pursued in this paper: rationality, authority and organizational effectiveness. In the parable of the spindle, the management board was attempting to increase the organizational effectiveness of their restaurants. The actions taken by the board were based on assumptions of rationality: experts were consulted, their analyses considered, a plan was devised and action was taken. Each of the experts offered a different explanation of the situation they observed in the restaurants. None of these diagnoses was necessarily correct, but each was rational within a given conceptual framework. Similarly, if a clutch of experts in the field of organizational effectiveness had been engaged to investigate the problem, an equally varied set of explanations would probably have been forthcoming. Perrow (1977), for instance, may have employed his notion of "Gross Malfunctioning Analysis," Evan (1976) his "systemic process" approach, while Mott (1972) may have based his analysis on the inability of each restaurant to adapt in the face of serious problems. The analyses that could have resulted would probably have provided valuable insights and would likely have been rational within their appropriate conceptual parameters. However, "rational" does not necessarily imply "right" when we are dealing with a varied set of conceptual models, for the congruency of these models to the reality they purport to represent is on a different order of analysis.
However, the main point is that modern day organizations are established and operated according to assumedly rational principles and are usually considered to be capable of rational analysis within the limitations of a given frame of reference.

In the case of the spindle, the directors were not required to decide which analysis or which conceptual model was right, for each expert offered the same solution. Hence the wise (and rational) thing to do was to act pragmatically. Administrators may rarely enjoy such clear cut situations in making decisions and may frequently be forced to make choices on the basis of the analysis offered by the expert, which takes us back to the validity of the underlying theory, the correctness of the analysis and a host of other factors. But this is not the immediate concern except insofar as it highlights the break-point between conceptual analysis and administrative action, for however our decision makers make up their minds, they face the "real world" task of implementation. A major assumption of this paper is that in attempting to improve the effectiveness in an organization, administrators must act, directly or indirectly, on the structure of the organization. This is what happened in the case of the spindle, for the introduction of this simple device restructured the organization concerned. Porter (1968) observes that the spindle serves at least these functions: it buffers the cooks from the waitresses, it queues the orders (not the waitresses), it serves as a sorting device, and as a memory register that provides a permanent record for the correction of mistakes and the allocation of blame should this be necessary. These functions modify the organizational structure primarily through a redefinition of the authority relationships between waitresses, cooks and managers.
This brings us to the final theme to be introduced - authority, for in designing and redesigning the structure of organizations, administrators adjust the relationships between members, and thus modify the authority of some members over others. The main object in the remainder of the paper is to outline a number of principles that could be followed in attempting such modifications. The intent is to seek some prescriptions for improved organizational effectiveness in schools. The method will be to consider the analyses offered by the prominent scholars of organizations, and seek points of agreement.

The Experts

The three experts recruited for this discussion are Max Weber, James D. Thompson and Elliott Jaques. Weber's (1947) comments on rationality and authority in contemporary organizations are widely acknowledged in the literature and should not be ignored in any attempt to design effective organizations. Jaques has been involved in a consultative and analytical role with a number of organizations over the past several decades, chief of which is Glacier Metal in the United Kingdom. He has made a number of salient contributions to the literature and developed several novel conceptual models, most of which are summarised and integrated in his (1976) recent *A General Theory of Bureaucracy*. Jaques real fame may lie in the future as his work becomes better known and his Canadian heritage is rediscovered. James Thompson remains a pre-eminent scholar in the field and his (1967) "Organizations in Action" is a seminal work that synthesizes earlier contributions and outlines many directions still to be explored in organizational studies. This book provides a starting point.
Modern Organizations as Rational Objects

Thompson (1967:4-13) begins his consideration of organizations by drawing the now familiar distinction between open and closed system models. Taylor and Weber are identified as providing examples of the closed system strategy. Hence Weber's outline of bureaucracy is viewed as containing a determinate number of elements that are only considered to vary to the extent that the administrator or analyst considers appropriate. Furthermore, the ultimate criterion in the design and management of such organizations is held to be that of efficiency. Because the system is closed and the desired state of affairs known, then models employing this approach (and hence the reality they represent) are considered to be inherently rational.

Open system analysis is, at least in an extreme form, essentially non-rational. The "discovery" of the "informal" organization and the emergence of contingency approaches that place stress on commerce between organizations and their environments, both introduced uncertainty into organizational analysis: not all the elements in a system could be known, cause and effect relationships become indeterminate and dysfunctions can be expected. To a large degree this approach reflects an attempt to more closely approximate reality, for the open system is an analogue of the 'natural' state taken by active entities of all kinds. But while the open system strategy may aid comprehension of the "state of being organized" this may be of little value in the pursuit of increased efficiency and effectiveness in human organizations.

Thompson (1967:9-10) sought to steer a middle passage between the mechanistic determinance of the 'closed' approach and the homeostatic indeterminacy of the 'natural' models by building on the Simon-March-Cyert
notions of bounded rationality. He (1967:8) observed that, despite the
'naturalness' of open system models,

... millions live each day on the assumption that a reasonable
degree of purposeful, effective action will be forthcoming from
the many complex organizations on which they depend. Planned
action, not random behavior, supports our daily lives. Specialized,
controlled, patterned action surrounds us.

In other words, in our dealings with organizations and in much
of their internal functioning, rationality is an operative concept.
But, he suggests, there are limits to the extent of this determinacy.
Within the technical core of organizations a certainty of outcomes
obtains and criteria of efficiency are relevant. However, this
technical rationality is shielded or 'sealed off' from environmental
uncertainty by a number of control processes and structural units,
subject to norms of organizational rationality. In the simplest case,
the units that 'buffer' the technical core deal with input-output and
coordinative processes and because they are, of necessity, in contact
with the environment, organizational rationality evidences the uncertainty
of open systems and satisficing, rather than maximizing, is an appropriate
norm.

In essence, then, Thompson's analysis rests on a recognition that
organizations operate "under norms of rationality" but because different
elements of an organization are forced to deal with differing degrees of
uncertainty, the degree of determinacy that obtains will also vary:
operations within the technical core will evidence a relatively high
degree of certainty and predictability; activity in peripheral, environ-
mentally connected sectors will be less determinate.

Weber was portrayed by Thompson as being overly concerned with
rationality in the establishment, operation and analysis of bureaucracies.
However, Weber (1947) approaches the issue of rationality within a broad socio-historical context, and in doing so provides a defense for his allegedly closed model of bureaucracy and a further argument for the consideration of modern-day organizations as primarily rational structures. He (Weber, 1947: 78) recognises two broad types of rationality: that which is concerned with calculated choice between alternate means and various ends, and that which is based on absolute commitment. The two types are logically exclusive as a basis for social action, but provide perennially valid orientations throughout human history. However, calculable rationality is considered by Weber to be the ideally-typical basis for action in modern capitalistic societies. Absolute rationality, which is associated with a commitment to an ideal, a cause or a charismatic personality, may seem irrational to an outside observer, but is perfectly logical to those that act according to the relevant rules. The mass suicide at Jonestown provides an illustrative example. But values and standards of normative behavior may become institutionalized in a social system to such a degree that they provide customary or traditional bases for action. A timely illustration of this is provided by the resurgance of the traditional Muslim values in Iran. To Westerners socialized to norms of calculable rationality, the behavior of contemporary Iranian personages may seem irrational, while it may be perfectly rational to traditional Muslim adherents in that nation.

The main point, however, is that Weber viewed modern organizations in Western society as being established and operated on systems of calculable rationality. Traditional, and to a large degree absolute, values have been replaced by a high reliance on calculability:

The fate of our times is characterized by rationalisation and intellectualism and above all, by the 'disenchantment' of the world ...
there are no mysterious incalculable forces that come into play ... one can, in principle, master all things by calculation.

(Weber, 1948:155,139)

This type of rationality, Weber argued, is evident in commercial, industrial, organizational and even recreational aspects of modern day life, but is exemplified in the scientific approach to the phenomenal world. In the study of organizations this means that bureaucracy becomes a paramount form, for the Weberian model of bureaucracy is, of course, based on rational-legal, as opposed to traditional or charismatic authority. Except for the usage of custom, the term 'legal' could be conveniently dropped from the term 'rational-legal', as Weber's approach considers all types of authority to have a basis in law - it is the element of calculable rationality that is important.

Having briefly surveyed the various forms of rationality identified by Weber we must also recognize that he was perfectly aware that most social action is influenced by a varied set of conditions and forces. Thus in order to provide firm bases for analysis he relies heavily on ideally-typical models of human action and social phenomena. These pure types were not intended to provide accurate description but to serve as reference and starting points in analysis. Hence in the analysis of any given organization Weber would expect that some aspects could be congruent to his bureaucratic type, while others would be more akin to other types of organization identified in his works, which are based on either traditional or charismatic types of authority. Of most interest is the set of organizations based on traditional norms, for Weber considered that even in the climate of intellectual-rationalism of the twentieth century, custom and habit are a significant influence on social action.
In sum Weber's position may not be that different from Thompson's. Both recognize different types and degrees of rationalism and both consider that modern organizations are established and operated in accordance with norms of calculable rationality. They differ in that Thompson identifies turbulent environments as the major source of uncertainty, while Weber attributes this to the nature of man himself which would seem to nurture various kinds of non-rational action. The other major difference is that Weber did not really devote much attention to organizational studies. His bureaucratic model represents his most intensive effort and is developed because it reflects what he considered to be the specifically modern type of organization. For the most part he was interested in socio-economic cultures within the broad sweep of human history and thus 'organizations' were just one of a large set of variables. In other words, his organizational models do not provide a 'complete' account, but offer a beginning, whereas Thompson's models are much more mature.

**Structure and Authority in Rational Organizations**

To some degree Jaques' work provides a much needed extension of Weber's original thoughts. He (Jaques, 1976:49) defines bureaucracy as:

> a hierarchically stratified managerial employment system in which people are employed to work for a wage or salary; that is to say, a stratified employment hierarchy with at least one manager who in turn has a staff of employed subordinates.

The similarity of this definition to some of the prominent features in Weber's conceptualization is obvious. Other points of agreement are also present, one of which is that a bureaucracy is an organization of employees who are under contract to an analytically and structurally independent body: the managing board of Porter's restaurant chain; the
elected school board in a given region. Another point of similarity, which is not made explicit by Jaques, is the highly contemporary nature of such types of organization: they cannot exist unless the concepts of contract, accountability and salaried employment are well established and widely accepted in a society. This requires, of course, the widespread acceptance of intellectual rationalism for these concepts rest on calculability.

But the point of most interest at this time is the congruency between the approaches of Jaques and Weber to organizational structure and authority. Both speak of hierarchical structures and both stress the importance of intellectually valid authority. However, Weber does not elaborate on the nature of bureaucratic hierarchies except to say they will be rationally designed so as to provide for subordinate accountability and supervision and to resolve internal conflicts. Jaques' presents a more thorough analysis.

Figure 1 reproduces the basic structural unit in his (1976:62) model of bureaucracy. Each of the positions in this triad represents a role occupied by an employee and although the figure shows both of the administrative positions as having only one subordinate, in reality they could have a number of such positions depending upon the span-of-control that obtains. The figure is not meant to represent all the positions in a given organization, but merely the three-level accountability system that is characteristic of rationally normed organizations. Hence a large bureaucratic hierarchy can be conceptualized as a chain of accountability triads as shown in the figure 1 inset.

In Jaques' (1976:62-86) analysis, the importance of the three-level chain in Figure 1 lies in the manner in which the occupants of each position are mutually accountable to each of their immediate