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THE DESIGN SCHOOL: RECONSIDERING THE BASIC PREMISES OF STRATEGIC MANAGEMENT

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Among the schools of thought on strategy formation, one in particular underlies almost all prescription in the field. Referred to as the 'design school', it proposes a simple model that views the process as one of design to achieve an essential fit between external threat and opportunity and internal distinctive competence. A number of premises underlie this model: that the process should be one of consciously controlled thought, specifically by the chief executive; that the model must be kept simple and informal; that the strategies produced should be unique, explicit, and simple; and that these strategies should appear fully formulated before they are implemented. This paper discusses and then critiques this model, focusing in particular on the problems of the conscious assessment of strengths and weaknesses, of the need to make strategies explicit, and of the separation between formulation and implementation. In so doing, it calls into question some of the most deep-seated beliefs in the field of strategic management, including its favorite method of pedagogy.

The literature that can be subsumed under 'strategy formation' is vast, diverse and, since 1980, has been growing at an astonishing rate. There has been a general tendency to date it back to the mid-1960s, although some important publications precede that date, such as Newman's initial piece 'to show the nature and importance of strategy' (p. iii) in the 1951 edition of his textbook *Administrative Action* (1951: 110–118). Of course the literature on military strategy goes back much further, in the case of Sun Tzu probably to the fourth century B.C. (Griffith, in Sun Tzu, 1971: ix).

A good deal of this literature naturally divides itself into distinct schools of thought. In another publication (Mintzberg, 1989), this author has identified ten of these. Three are prescriptive in orientation, treating strategy formation as a process of conceptual design, of formal planning, and of analytical positioning (the latter including much of the research on the content of competitive strategies). Six other schools deal with specific aspects of the process in a descriptive way, and are labeled the entrepreneurial school (concerned with strategy formation as a visionary process), the cognitive school (a mental process), the learning school (an emergent process), and the environmental school (a passive process). A final school, also descriptive, but integrative and labeled configurational, by seeking to delineate the stages and sequences of the process, helps to place the findings of these other schools in context.

This paper addresses itself to the first of these schools, in some ways the most entrenched of the ten. Its basic framework underlies almost all prescription in this field and, accordingly, has had enormous impact on how strategy and the strategy-making process are conceived in practice as well as in education and research. Hence our discussion, and especially critique, of this school can in some ways be taken as a commentary on the currently popular beliefs in the field of strategic management in general. Our intention, however, is not to dismiss so important a school of thought, but rather to understand it better

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and so place it into its natural context, and thereby open up thinking in the field in general.

This paper probes first into the basic model of the design school, then into the basic premises that underlie it. That leads to a critique of this school, which gives rise to an attempt to place it into its own viable context—the types of organizations and of situations most suited to it. In conducting this investigation we draw widely on the literature of this school, but use one text in particular—almost certainly this school's best known. In this sense this paper can also be viewed as a rather extensive review of a book that has had a major impact on the field of strategic management.

ORIGINS OF THE DESIGN SCHOOL

Ostensibly the simplest and most fundamental view of strategy formation is as a process of informal conception—the use of a few essential concepts to design 'grand strategy.' Of these concepts the most essential is that of congruence or match. In the words of the design school's best-known proponents: 'Economic strategy will be seen as the match between qualification and opportunity that positions a firm in its environment' (Christensen, Andrews, Bower, Hamermesh, and Porter, 1982: 164)[1] 'Capture success' seems to be the motto of the design school; 'find out what you are good at and match it with what the world wants and needs.' These capabilities or qualifications have been variously referred to as 'distinctive competence,' 'differential,' 'competitive,' or 'comparative advantage' (the latter more commonly used in the context of public policy), or more simply (and broadly) an organization's 'strengths and weaknesses.'

The design school has generally been associated with the Business Policy group at the Harvard Business School. That group has pursued its own strategy for, as we shall see later, there is a clear congruence between the view of strategy formation that it has promoted for several decades and its own pedagogical requirements in using the case study method.

The Christensen *et al.* book quoted from above, entitled *Business Policy: Text and Cases*, first appeared in 1965 (by Learned, Christensen, Andrews, and Guth) and quickly became the dominant textbook in the field, as well as the dominant voice for this school of thought.[2] Certainly its text portion, attributed in the various editions to co-author Kenneth Andrews (who also published this material separately (Andrews, 1971, 1980a, 1987)) stands as the most outspoken and one of the clearest statements of this school, although claims that this school, or even the concept of business strategy itself, originated with this group at Harvard (e.g. Bower, 1986: vii) do not stand up to scrutiny.

Some of the basic concepts that underlie the design school, at least as published, would (as we shall see) appear to have been first stated in the academic world by a Berkeley sociologist named Philip Selznick, in his book *Leadership in Administration*, published in 1957. Even earlier, though less specific, is a 1955 article by Reilley, possibly the first reflection of this approach. Another key publication in 1962, *Strategy and Structure*, by historian Alfred Chandler (then at MIT), really established this school's concept of business strategy and its relationship to structure, although mention also has been made of the sophisticated discussion of 'Managerial Strategies' in David G. Moore's paper of that title in 1959. There followed an article by Seymour Tilles in 1963 (then a Harvard Business School lecturer) entitled 'How to evaluate corporate strategy', and a textbook chapter by William Newman of the Columbia University Business School in the same year (see especially 1963: 95–98; the passage noted earlier in the 1951 edition of the Newman textbook might make him the real father of the concept of business strategy in academe, although in private correspondence with this author, Newman has expressed the belief that the overall ideas may have originated in the McKinsey consulting practice, as reflected in the Reilley piece of 1955 (see also McKinsey, 1932, for early suggestions of this thinking)). The Andrews text followed in 1965, the same year that Igor Ansoff published his highly successful book *Corporate Strategy*, based on many of the same concepts (but more in the spirit of the planning school).[3]

[1] Thus Lindgren and Spangberg (1981: 26) refer to this as the 'fit school.'

[2] Undoubtedly encouraged by the fact that in the early years this group trained by far the largest number of doctoral students in business policy.

[3] Porter (1981: 610; 1983: 173), a co-author in the 1982 and

Subsequently these ideas embedded themselves in the management literature. Indeed, by the 1980s the Christensen *et al.* textbook was one of the few left that represented them in their pure form, most others favoring the more elaborated renditions of the planning or positioning schools.[4] Accordingly, and given the impact that this rendition of the design school has had over the years—as well as its clarity and forcefulness of expression—we shall use it as a primary source in the discussion that follows, referring to it as the 'Andrews' text'. We shall draw primarily on the 1982 edition of this textbook, but shall also reference relevant variations in its earlier editions as well as the latest one, published in 1987, although the changes from 1965 to 1987 were relatively minor.

[3] Continued.
1987 editions of the Harvard textbook, writes of how the ideas in the original text (the 'LCAG *paradigm*,' after the names of the four original authors) were 'subsequent[ly]' translated and extended by others, citing in particular Ansoff's book *Corporate Strategy*. In fact, Ansoff went to press with his similar ideas in the same year (1965) as Porter's co-authors' originally did, and neither book references any work by authors of the other (although Edmund Learned, the senior author of the first edition of the Harvard textbook, did himself note the similarities in a book published with Sproat one year later: 'Significantly, [Ansoff's] work offers numerous parallels with Harvard thinking that should not be obscured by differences in terminology, definitions, emphasis, and coverage' [1966: 94]). In the Preface to the first edition of the Harvard book, the authors write that the content of the book 'is the outcome of about ten years of case and course development' (Learned *et al.*, 1965: vii), although in the 1982 version they refer to the core idea having developed in the early 1960s (Christensen, Andrews, and Bower, 1982: viii; co-author Bower is more precise in a 1986 publication: 'The problem of corporate strategy was first phrased as a research question in 1959 when Kenneth Andrews reported his study of the Swiss watch industry in a note and a series of cases' (p. vi).) Ansoff published a rough version of his approach in article form two years earlier (Ansoff, 1964), although he referred there to an initial unpublished paper of 1958. Note should also be made of comments by Chester Barnard in a 1948 book (p. 169) which seem to be in the spirit of the design school, of the discussion of 'administrative strategy' (pp. 10–18) in the Hardwick and Landuyt textbook by that title in 1961, and of an article by Gilmore and Brandenburg in 1962 entitled 'Anatomy of corporate planning'. Although its detail and elaborated steps place this last paper clearly in the planning school, underlying these steps is the same model as that of the design school. (Gilmore and Brandenburg note in a footnote that 'we are indebted to Dr. H. Igor Ansoff for introducing the concept of synergy to us and for his assistance in clarifying a number of steps in our planning framework' (1962: 61).)

[4] To this could be added Tregoe and Zimmerman's book *Top Management Strategy* (1980), although not a textbook. The latest Newman text (Newman, Warren, and McGill, 1987) remains largely in the spirit of this school (in chapter 4 at least), although it also reflects increased attention to the planning school.

THE BASIC DESIGN SCHOOL MODEL

In his 1957 book, Selznick wrote that:

> Leadership sets goals, but in doing so takes account of the conditions that have already determined what the organization can do and to some extent what it must do . . .
>
> In defining the mission of the organization, leaders must take account of (1) *the internal state of the policy*: the strivings, inhibitions, and competences that exist within the organization, and (2) *the external expectations* that determine what must be sought or achieved if the institution is to survive (pp. 62, 67–68).

Selznick also coined the term 'distinctive competence' (pp. 43ff.) and noted that 'the task of leadership is not only to make policy but to build it into the organization's social structure' (pp. 62–63), an aspect of the process that came to be called *implementation*.

Andrews summarizes the essence of his model[5] as

> the intellectual processes of ascertaining what a company *might do* in terms of environmental opportunity, of deciding what it *can do* in terms of ability and power, and of bringing these two considerations together in optimal equilibrium. . . . what the executives of a company *want to do* must also be brought into the strategic decision [as must] what a company *should do.*

Finally, there is 'the implementation of strategy . . . comprised of a series of subactivities which are primarily administrative' (p. 98). The Andrews' text of 1982 splits into two 'books,' the first on 'determining', the second on 'implementing corporate strategy.'

Our depiction of the basic design school model (similar to Andrews' own figure of the development of 'economic strategy' (p. 187), but with other elements of his discussion added (see also his figure on p. 99)), is shown here in Figure 1. Consistent with the attention accorded in the text, the model places primary emphasis on the appraisals of the external and internal situations, the former uncovering threats and opportunities in the environment, the latter revealing strengths and weaknesses of the organization. Secondary emphasis is placed on understanding the values of the management, as well as its social responsi-

[5] We should point out that Andrews himself rejects the word 'model' (p. 12), a point we shall return to later.

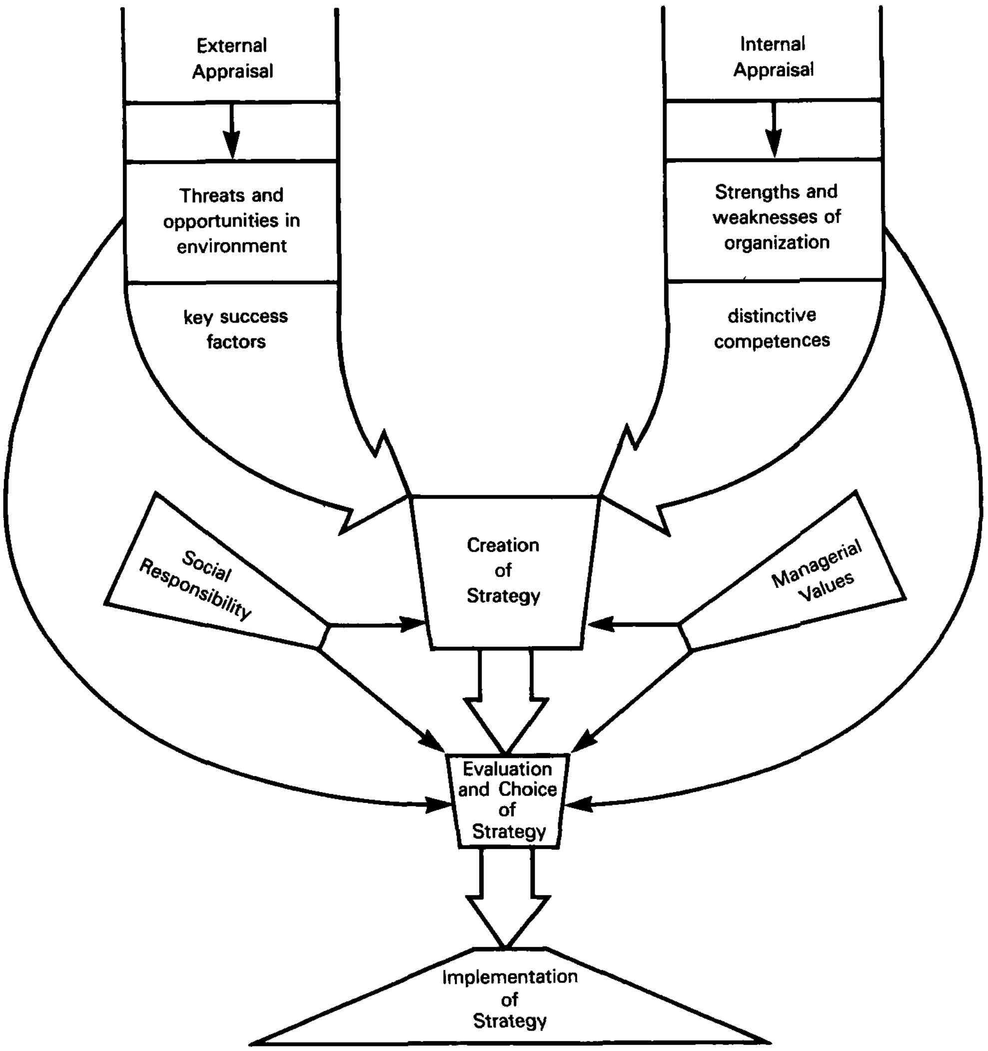

Figure. 1. Basic design school model

bilities. The match between these elements leads to the creation of strategies, which are then evaluated, with the chosen one subsequently implemented. Andrews does not provide extensive discussion of any of these issues (the whole text portion of the 1982 book numbers 114 pages, the rest of the 838-page book being cases), although others have developed some of these themes more extensively.

On external appraisal, Andrews' section on 'The nature of the company's environment' totals 20 pages, but 12 of these come from Michael Porter's work on *Competitive Strategy* (1980), literally spliced into the Andrews' text, initially in the 1982 edition.[6] Likewise, the section on internal appraisal, 'identifying corporate competences and resources,' is brief, touching on a variety of points, such as the difficulty 'for organizations as well as for individuals to know themselves' (p. 183) and the idea that 'individual and unsupported flashes of strength are not as dependable as the gradually accumulated product- and market-related fruits of experience' (p. 185). This ties back to an important theme in Selznick's

[6] The sentences immediately preceding and following this new material (pp. 167 and 179) are identical to those that appeared next to each other in the previous edition of the book (Christensen *et al.*, 1978: 251).

book, that 'commitments to ways of acting and responding are built into the organization,' intrinsic to its very 'character' (1957: 67).

Figure 1 shows two other factors considered by this school to be taken into consideration in strategy-making. These are organizational values—the beliefs and preferences of those who formally lead the organization—and social responsibilities—specifically the ethics of the society in which the organization is embedded, at least as perceived by its managers. With the notable exception of Selznick (1957), however, most authors in this school accord values and ethics secondary attention. Andrews offers his two brief chapters well after he has developed the framework dealing with external and internal appraisals.

On the actual generation of strategies, little is written in this school, besides an emphasis on this being a 'creative act,' to quote Andrews (1982: 186). Indeed, if this were true, what more could be said, short of trying to use cognitive psychology to probe inside the strategist's mind. In lieu of describing the process, however, a number of writers associated with this school do try to characterize the result, in particular seeking to distinguish some core or *dominant element* of the strategy (e.g. Tregoe and Zimmerman, 1980: 43 and Ohmae, 1982). This has an important implication, because it replaces strateg*ies* within *strategy*. In effect, rather than considering an organization's intentions as a set of distinct, if coupled, strategies (as tends to be done in the planning and even the positioning schools), it treats them as an integrated concept.

Once strategies are created, the next step in the model is to evaluate them and choose the best one. The assumption, in other words—usually implicit—is that several alternative strategies have been produced, and one is to be selected. There is an ambiguity here, however, because even writers such as Andrews, who clearly view strategy formation as a custom-made process of design (for which there is evidence that organizations tend to produce only a single solution; Mintzberg, Raisinghani and Theoret, 1976), assume that alternate strategies (in other words, alternate conceptions of the business) will be evaluated to select a single one (Andrews' text, pp. 105, 109).

Tilles published first on this subject in an article entitled 'How to evaluate corporate strategy' (1963). Andrews (pp. 105–108) followed by combining Tilles's list of six criteria with other elements of the model, while Rumelt, a graduate of the Harvard doctoral program in policy, elaborated these ideas in a most succinct (1980) and sophisticated (1979) way, nevertheless retaining the spirit of the design school.

Finally, virtually all of the literature of this school makes clear that, once strategy is designed and agreed upon, it is then implemented. We show implementation on the diagram as flaring out from formulation, as if the process draws on a variety of data to narrow down to convergent choice before it diverges again to ensure implementation across the entire organization. Andrews, for example, is clear on the subordinate role of these elements (e.g. p. 543). Interestingly, here also is the one place where he becomes rather specific. He lists 12 steps in the implementation process (backed up by a fair amount of text), a list that seems to encompass any aspect of the strategy process not considered in formulation.[7] The same tends to be true of other design school publications as well.

PREMISES UNDERLYING THE DESIGN SCHOOL

Running through all of the literature that we identified with this school are a number of fundamental premises about the process of strategy formation. Some of these tend to be explicit, others implicit, but they are always evident. This is especially so in the Andrews' text, although all are at one time or another qualified in his discussion. But it is the central themes of a work that form the impression left with the reader, not the secondary qualifications. Below we discuss seven basic premises that underlie this school.

Premise 1: Strategy formation should be a controlled, conscious process of thought

It is not action that receives the greatest attention from the design school so much as reason—strategies formed through a tightly controlled process of conscious human thought. Action

[7] In their book *Implementing Strategy*, Hrebiniak and Joyce indeed refer to implementation as 'all the remaining components' (1984: 29).

follows, once the strategies have been fully formulated. This theme runs through all of Andrews' writings, for example in the comment that managers 'know what they are really doing' only it they make strategy as 'deliberate as possible' (1981: 24), or more simply, in reference to his 'thesis' about 'conscious strategy' that should be 'consciously implemented' (Andrews' text, p. 543). But this is perhaps made most clear in his comments that, while the model may be simple, it is not necessarily natural (p. 185)—it must be learned, formally (e.g. Andrews' text p. 6).

Andrews is careful to position his view of this process clear of intuition on one side (non-conscious thought) and emergent strategy on the other (where action drives reflection). On intuition, for example, Andrews comments that 'if [strategy] is implicit in the intuition of a strong leader, the organization is likely to be weak and the demands the strategy makes upon it are likely to remain unmet' (pp. 105–106). Likewise, he writes of the need to change 'intuitive skill' into 'conscious skill' (p. 6). And as for his view of emergent strategy, which means pattern in action over time that is not driven by central intention (Mintzberg, 1978; Mintzberg and Waters, 1985), while Andrews presents a definition of strategy in his 1982 text that makes reference to pattern (p. 93), in a new passage in his 1987 text, he makes clear that he means pattern among and across 'goals and policies,' not over time (p. 15; see also Premise 5).

In this edition, as in all the others, Andrews clearly means to associate strategy with intentionality. Corporate strategy, for example, 'defines products and markets—and determines the company's course into the almost indefinite future' (1987: xi). In fact, in his 1982 text, Andrews equates emergent strategy with 'erosion:'

> Strategy will evolve over time, no matter what. It will be affected by the consequences of its implementation. But the elucidation of goals can transcend incrementalism to make it a series of forays and experiments evaluated continuously against stated goals to result in the deliberate amendment of strategy or in the curtailment of strategic erosion (pp. 553–554)

Likewise, Andrews contrasts 'purpose' with 'improvisation,' 'planned progress' with 'drifting' (p. 20). At the end of his text he claims that 'a strategy may suddenly be rationalized to mean something very different from what was originally intended because of the opportunism which at the beginning of this book we declared the conceptual enemy of strategy' (pp. 828–829).[8]

Premise 2: Responsibility for that control and consciousness must rest with the chief executive officer: that person is THE strategist

To the design school, ultimately there is only one strategist, and that is the manager who sits at the apex of the organizational hierarchy. In Hayes' terms, 'this "command-and-control" mentality allocates all major decisions to top management, which imposes them on the organization and monitors them through elaborate planning, budgeting, and control systems' (1985: 117).

Again, the origins of this can be found in Selznick: 'it is the function of the leader-statesman—whether of a nation or a private association—to define the ends of group existence, to design an enterprise distinctively adapted to these ends, and to see that that design becomes a living reality' (1957: 37). Once more Andrews reiterates the point most clearly. On page 3 of his text, he associates the whole field with the 'point of view' of the 'chief executive or general manager'; on page 19, he entitles a section 'the president as architect of organizational purpose' (hence Zand (1981: 125) refers to this school as the 'rational architect' model); and on page 545 he writes that 'the general manager is principally concerned with determining and monitoring the adequacy of strategy, with adapting the firm to changes in its enviroment, and with securing and developing the people needed to carry out the strategy or to help with its constructive revision or evolution.' As we shall soon discuss, in the 1987 text Andrews widens the participation of others in the strategy formulation process, especially in the 'innovative' corporation, but not at the expense of the chief executive's central role.

It might be noted that this premise not only relegates other members of the organization to

[8] Andrews' words are reminiscent of those of Selznick: 'When institutional leadership fails, it is perhaps more often by default than by positive error or sin. Leadership is lacking when it is needed; and the institution drifts, exposed to vagrant pressures, readily influenced by short-run opportunistic trends' (1957: 25).

subordinate roles in strategy formation, but it also precludes external actors from the process altogether (except for the directors, who Andrews believes must review strategy (1980b, 1981)). This is most clearly reflected in Andrews' discussion of the ethics discussion in terms of the social responsibility of the managers rather than the sheer power of outsiders. This, in fact, is just one aspect of a larger problem associated with the design school—the relegation of the environment to a minor role, input to strategy formation but not an intrinsic part of the process, to be accounted for and then navigated through but not interacted with.

Premise 3: The model of strategy formation must be kept simple and informal

The Preface to the Harvard textbook contains a quotation by Andrews that 'the idea of corporate strategy constitutes a simple practitioner's theory, a kind of Everyman's conceptual scheme' (p. 14). Later, he adds in the text that this 'is not a "theory" attended in the rigorous sense by elegance and vigor', nor is it 'really a "model," for the relationships designated by the concept are not quantifiable;' rather it serves as an 'informing idea' (p. 12), or, as Rumelt puts it, 'a set of constructs' (1984: 558).

Fundamental to (what we nonetheless prefer to call) the model is the belief that elaboration and formalization will sap it of its essence. This premise in fact goes with the last: one way to ensure that strategy can be controlled in one mind is to keep the process simple. As Andrews writes: 'When the variety of what must be known cannot be reduced by a sharply focused strategy to the capacity of a single mind and when the range of a company's activities spans many industries and technologies, the problems of formulating a coherent strategy begin to get out of hand' (p. 182).

This premise, together with the first, forces Andrews to tread a fine line throughout his text, between nonconscious intuition on one side and formal analysis on the other, a position he seems to characterize as 'an act of judgment' (p. 108). This also seems to differentiate clearly the design school from the entrepreneurial school on one side and the other prescriptive schools of planning and positioning on the other (one emphasizing elaboration of the same basic model, with a vengeance, the other, formal analysis of certain of its components).

We have already noted Andrews' stand on intuition; on planning he writes that 'this book . . . virtually ignores the mechanisms of planning on the grounds that, detached from strategy, they miss their mark' (p. 10).[9]

Of course, if elaboration is the problem, then even theory and research can pose a threat. Thus, Andrews adopts a position in the text that is not just atheoretical but decidedly anti-theory. For example, all of the research on organization structure is dismissed with the comment that 'the literature of organization theory is by itself . . . of very little use in managing a live orgnaization' (p. 554).

The introduction to the first edition of the textbook contained the following comment:

> A considerable body of literature purporting to make general statements about policy-making is in existence. It generally reflects either the unsystematically reported experience of individuals or the logical projection to general management of concepts taken from engineering, economics, psychology, sociology, or mathematics. Neither suffices (Learned *et al.*, 1965: 6).

On the latter Andrews added: 'The disciplines cited have much to do with business, but their purposes are not ours. Knowledge generated for one set of ends is not readily applicable to another' (p. 6). The text went on to note that 'research has been for some time under way, but is not yet advanced enough to make more than a modest claim on our attention. . . . the most valid literature for our purpose is not that of general statements but case studies' (p. 6). These comments survived virtually intact to the 1982 edition, the most significant change being that research now 'begins to make a claim on our attention' (p. 6). Moreover, added is the statement that 'the books referred to [in the footnotes] comprise a relevant but incidental source of knowledge'. (It is, in fact, instructive to consider these references. In all, there are 39 of them to theoretical works in the footnotes of the 1982 edition of the text, of which 31 are by

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[9] Interestingly, in so dismissing planning at this point, Andrews resurrects intuition: 'All the knowledge, professional attitudes and analytical and administrative skills in the world cannot fully replace the intuitive genius of some of the natural entrepreneurs you will encounter in this book' (p. 10).

faculty members or doctoral students at the Harvard Business School.)[10]

It might be noted that this treatment of theory extends even to the work of a co-author whose ideas are contained in the same book. As noted earlier, Michael Porter's views (centrally located in the positioning school) were literally spliced into that portion of the text on assessing the environment. The text on either side of it, however, questions assumptions fundamental to Porter's work (1980, 1985). To take just one obvious example:

> The choice of objectives and the formulation of policy to guide action in the attainment of objectives depend upon many variables unique to a given organization and situation. It is not possible to make useful generalizations about the nature of these variables or to classify their possible combinations in all situations (Andrews' text, p. 5).

Thus the Porter graft does not take, and, more importantly, other theory has not been allowed to infiltrate the model.

Premise 4: Strategies should be unique: the best ones result from a process of creative design

As suggested above, it is the specific situation that matters, not any system of general variables. It therefore follows that strategies have to be tailored to the individual case: 'In each company, the way in which distinctive competence, organizational resources, and organizational values are combined is or should be unique' (Andrews' text, p. 187). Stronger words are offered on page 109: 'sometimes the companies of an industry run like sheep all in one direction' although imitation 'does not constitute the assurance of soundness.'

As a result of this premise, the design school says little about the content of strategies themselves, but instead concentrates on the process by which they should be developed. And that process above all should be a 'creative act' (Andrews' text, p. 186), to build on *distinctive* competence. Writing in support of the positioning school, Hofer and Schendel refer to what we are calling the design school as the 'situational philosophy' (1978: 203), at one extreme of the field, in contrast with the 'principles of management' approach at the other.

Premise 5: Strategies emerge from this design process fully formulated

As noted in passages cited above, this school offers little room to incrementalist views or emergent strategies. It is the big picture that results from the process—the grand strategy, an overall concept of the business. This is no Darwinian view of strategy formation but the Biblical version, with strategy the final conception! There is, in other words, a strong implication that strategy as perspective appears at a point in time, fully formulated, ready to be implemented. How else could Andrews have assumed that the process reduces to 'choice,' a word he uses often, referring also in the Preface to the 1987 edition to '*this* decision,' '*the* strategic decision,' 'the entrepreneurial decision . . . [once] identified' (p. xiv, italics added). In other words, the assumption is that the strategist is able to line up alternative strategies before him to be evaluated so that one can be definitively chosen.

Premise 6: These strategies should be explicit and, if possible, articulated, which also favors their being kept simple

While Andrews accepts various reasons for not articulating strategy (such as confidentiality or difficulty of updating (see pp. 96–97)), he clearly views these as necessary evils. In common with virtually all the writers of this school, he believes that strategies should at least be explicit to those who make them and, if at all possible, articulated so that others in the organization can understand them: 'The unstated strategy cannot be tested or contested and is likely therefore to be weak . . . . A strategy must be explicit to be effective and

[10] For the record, these are all the references found in the text portion of the book, as well as the Preface. References to cases, or references within the cases themselves, were not included. References were counted rather than sources, so that in a few cases the same source was referenced more than once. A source was considered to emanate from Harvard if at least one author was on the staff or was a doctoral student there. Lest this criticism be extended unfairly to all of the co-authors, or even the claims about the literature itself, it should be noted that Edward P. Learned, the senior author of the original edition of the textbook, in his book published together with Sproat in 1966, and entitled *Organization Theory and Policy*, contained perhaps half the amount of text, yet twice the number of references, only a small proportion of those emanating from the Harvard Business School. The 1987 edition of the Andrews' book contains 24 such references, 18 from Harvard.

specific enough to require some action and exclude others' (pp. 105–106).

If strategies are to be so articulated, it also follows that they have to be kept rather simple: to the point, easily stated to be easily understood. 'Simplicity is the essence of good art,' writes Andrews, 'a conception of strategy brings simplicity to complex organizations' (p. 554). To him, strategy helps organizations make better decisions 'by reducing the world of detail to be considered to those central aspects of external environment and internal resources that affect the company and bear on the definition of its business' (p. 835).

Of particular interest to Andrews is the role of outside directors in strategy formation: he believes that they must be actively involved at least in the evaluation and review processes. But this can only happen if strategies are explicit, so that they can be articulated to the directors, and simple, so that they can be understood by people who have only brief time to devote to the organization: 'The power of strategy as a simplifying concept enabling independent directors to *know* the business (in a sense) without being *in* the business will one day be more widely tested at board level' (p. 834).

Premise 7: Finally, only after these unique, full-blown, explicit, and simple strategies are fully formulated can they then be implemented

We have already noted the sharp distinction this school makes between the formulation of strategies on one hand and their implementation on the other. Consistent with classical notions or rationality—diagnosis, prescription, then action—the design school clearly separates thinking from acting (see Bourgeois and Brodwin on their 'change model.' 1984: 246). (It is of interest that the word used is 'implement,' not 'achieve,' the assumption being that given proper implementation, achievement is a foregone conclusion.)

Central to this distinction is the associated premise that structure must follow strategy. As Andrews puts it: 'Corporate strategy must dominate the design of organizational structure and processes' (p. 543). The assumption seems to be that each time a new strategy is formulated, the state of structure and everything else organizational is to be considered anew: 'Until we know the strategy we cannot begin to specify the appropriate structure,' writes Andrews (p. 551), as if the existing structure does not bear on the new strategy.

Andrews' qualifications

While these seven premises are clearly evident in Andrews' text, as noted earlier he does qualify virtually all of them, tucking into his text here and there either nuances that soften their character or else comments that acknowledge the unfortunate reality, as compared with the preferred ideal. A number of them have also been added to the 1987 text, for example:

> False hope, oversimplification, and naivete, as well as zest for power, have often led . . . to the assumption that the chief executive officer conceives strategy single-mindedly, talks the board of directors into *pro forma* approval, announces it as fixed policy, and expects it to be promptly executed by subordinates under conventional command and control procedures (p. 82).

Andrews rejects this view for all but 'the entrepreneurial startup stage,' while we see it as a not unreasonable caricature of his own text!

In his 1982 text Andrews wrote that 'strategy formulation is itself a process of organization, rather than the masterly conception of a single mind' (p. 827), in other words, at least in 'technically or otherwise complex organizations,' 'an activity widely shared in the hierarchy of management' (p. 828). In 1987 he even contrasted 'constructive engagement' with 'archaic notions of authority, responsibility, hierarchy, status, and centralized decision making ' (p. 86). Yet his major justification for this seemed to be the generation of commitment to the strategy emanating from the apex of the organization's hierarchy. 'Commitment . . . is a simple reason for the involvement of whatever number of people is required to make a success of whatever is intended' (p. 120; see also pp. 55–56, 59).

Andrews also accepted that 'in real life the processes of formulation and implementation are intertwined' (exist in a 'reciprocal relationship' (1987: 853)), that 'the formulation of strategy is not finished when implementation begins' even though the cases in the book have been arranged around these two topics 'for the sake of orderly presentation' (1982 text, p. 541). He also acknowledges that 'we should look first at the logical proposition that structure should follow strategy in order to cope with the organizational reality that strategy also follows structure' (p. 99), in other words, that 'the structure and processes in place will in fact affect the strategy' (p. 552).

In the 1982 text Andrews acknowledges emergent strategy as well (e.g. p. 553), going further in the 1987 text to discuss 'a balance between focus and flexibility, between a sense of direction and responsiveness to changing opportunities . . . . Corporate strategy need not be a straitjacket. Room for variation, extension, and innovation must be provided' (p. 84). Yet he is careful to avoid association with what he calls extreme incrementalism, understood as reactive improvisation, muddling through, or following one's nose' (p. 83). And elsewhere in the 1987 edition, new sections also make clear the continuing commitment to deliberateness: 'It is not only possible but also essential to plot a course into a future that cannot be foretold . . .' (p. xiii, see also the comments on Japanese management on pp. vi–vii).

Adding all these qualifications together, one can easily come up with quite a different model of strategy formation. But of course, no reader can doubt for which model Andrews stands, and not just 'for the sake of orderly presentation'![11]

One obvious question that arises from a number of these qualifications is why practice seems to differ from the prescribed model, at least some of the time. Andrews does not address the question—research of course does, but he precludes the results of research from his text. Nor does he pursue these qualifications at any length. Most are presented as asides or afterthoughts, while his real commitment remains to the premises themselves as, of course, is natural if he is not to undermine his own position.

The fact is that the premises of the design school combine to form their own tightly integrated strategy—the whole thing really is a 'model' after all. By ultimately remaining true to its premises, Andrews positions the design school in its own niche, distinguishing it particularly from the planning and positioning schools on one side, which by elaborating the model shift it from the realm of judgement to that of analysis, and the entrepreneurial school on the other, which by mystifying the whole process locks it into the inaccessible (and unteachable) realm of intuition. The outstanding question is how large is that niche: how much of the viable strategic behavior of organizations, whether for purposes of description *or* prescription, is it reasonably able to encompass?

CRITIQUE OF THE DESIGN SCHOOL

The writings of the design school can be critiqued on a number of levels. In perhaps the most general sense, the school has denied itself the chance to adapt. Research results that have put parts of it under suspicion were not considered; indeed, there was no reason to, if the model could not be elaborated upon. This problem is well illustrated by the book by Norman Berg (1984), also of Harvard, who provided, two decades after the original Andrews' text, almost the same chapter headings (save an application at the end to the divisionalized firm), with the same points made in the same ways, including even the same qualifications (see for example, pp. 28–33).

As Andrews so keenly argued, the source of data and inspiration for the model was to be the concrete case—the description of one firm in one situation. Ironically, however, his beliefs about theory kept him from using even this rich data base to build better theory. Certainly after 1965, if not before, if there was a relationship, then the model had to drive the writing of cases (for example, if you want to find out how strategy is made, go interview *the* strategist), not vice-versa, since the model has barely changed since then.

Of course, its supporters might contend that the model was good enough in 1965 and remains

[11] Or 'temporary conceptual convenience', as Andrews put it in a memo to his colleagues in response to comments this author made in a talk given at the Harvard Business School in 1976:

> whatever our preferences, let us avoid the allegation that the central conceptualization of Business Policy as a field separates formulation from implementation for anything except temporary conceptual convenience. The interrelationships of a complex interdependency cannot be intelligently discussed all at once. What is being related can usefully be stopped and examined before reinstalling it conceptually in a dynamic process (Andrews, 1976: 4).

In a personal reply to Andrews, I concluded that with respect to this dichotomy, 'Aside from headings, we may be doing the same thing. The question is: do headings matter?!' We shall return to this later in our discussion.

so today. We shall not promote this contention, however, its contribution has been profound, as we shall point out later, but it has never been good enough, indeed no one model can be. It describes but one approach to strategy formation, and even that one sometimes exhibits a level of generality and a tone of inevitability that seems overly simple in places and, at times, dogmatic. Indeed one sometimes wonders whether, like the testament of a religious prophet, it comprises a set of profound truths subtly buried in simple prescriptions, or else if 'the whole idea is just one big fat platitude' (as the Harvard authors, to their credit, quote a critical company executive in the final case of their 1982 edition (p. 821)).

In the Preface to this 1982 edition the authors wrote that 'our teaching focus then [when the core idea of the book was developed in the early 1960s], as today, emphasizes the determination of corporate strategy (Book One) and the implementation of corporate strategy (Book Two). This format has stood the test of time' (p. viii). But it has not, even in their own school, as attested to by recent difficulties and changes in the Harvard MBA Policy course. That course still splits into two on these lines, but formulation has been moved into the first year of the program, and refashioned in the spirit of the positioning school as Porter articulates it, while the second half on implementation remains (at the time of this writing) in a state of flux after several years of searching for a new formula.

Strategy can locate a system in a niche, but in so doing narrow its perspective. This is what seems to have happened to the design school itself with respect to strategy formation. As noted, the premises of the model deny certain important aspects of strategy formation, including incrementalism and emergent strategy, the influence of existing structure on strategy, and the full participation of actors other than the chief executive. We wish to elaborate on these shortcomings in this critique, to indicate how they narrow its perspectives to certain contexts (as indeed, do the premises of most of the other schools).

One point should be made before we probe into the details. Andrews might well argue that we are interpreting his writings too literally, that it is unfair to take apart a *model*—a specified sequence of prescriptive steps—when all he meant to propose was a *framework*. Leaving aside the ambiguities in Andrews' own writings on this point,[12] even leaving aside the fact that an author must be interpreted by his central thrust rather than his secondary qualifications, in the most fundamental sense the two interpretations are not really different. Both are underlaid by some powerful assumptions, a critique of which will underlie our own argument. These concern the central role of conscious thought in strategy formation, that such thought must not only take precedence over action but must precede it in time, and correspondingly that the organization must separate the work of thinkers from that of doers. In our view, these assumptions often prove false, both descriptively and prescriptively. In other words, often not only don't organizations do these things, but by all accounts, they *should not*. This suggests that while the design school framework, if not the model, may never go out of *date*, it can easily go out of *context*.

We develop our critique by considering specific aspects of the model—first, the belief about the need for a conscious assessment of strengths and weaknesses, then the assumed sequence of strategy followed by structure, after that the premise that all strategies should be made explicit, and finally the assumed dichotomy between formulation and implementation. We shall conclude the critique by considering the relationship between the design school model and case study teaching, before closing the paper with a delineation of the contexts we believe to be most appropriate for this school. The reader is asked to bear in mind that although the other prescriptive schools of planning and positioning have broken with certain of the premises of the design school (notably in keeping the process simple and strategies unique, to a lesser extent also in introducing the planner and analyst into the process alongside the chief executive), the fact that they have accepted the most basic ones renders most of the following a critique of those schools as well.

[12] Or even his support for the specific model: for example, 'the text is dispersed throughout the book so as to permit a *step-by-step* consideration of what is involved in corporate strategy and in the subactivities required for its formulation and implementation' (p. 11; italics added).

Assessment of strengths and weaknesses: thinking vs. learning

Our critique of the design school revolves around one central theme: its promotion of thought independent of action, strategy formation above all as a process of *conception*, rather than as one of *learning*. We can see this most clearly in a fundamental step in the formulation process, the assessment of strengths and weaknesses.

How does an organization *know* its strengths and weaknesses? On this, the design school is quite clear—by consideration, assessment, judgement supported by analysis, in other words, by conscious thought. One gets the image of executives sitting around a table discussing the strengths, weaknesses, and distinctive competences of an organization, much as do students in a case study class. Having decided what these are, they are then ready to design strategies.

Some writers offer specific lists of potential strengths and weaknesses for all organizations, while others, though not offering such lists, do assume that types of strengths and weaknesses exist *in general*. Andrews, on the other hand, would only associate strengths and weaknesses with a particular organization—its competences are *distinctive* to itself. But does even that specify them precisely enough?

In his article on 'strategic capability', Lenz (1980) critiques the use of an 'organizational frame of reference'—usually based on some abstract ideal or a comparison with the situation of the past—with an external frame of reference. In other words, internal capability has to be assessed with respect to external context. But as we have already mentioned, there is a tendency in the design school to slight the environment in favor of a focus on the organization itself (which may manifest itself in a tendency to overstate strengths and under emphasize weaknesses (e.g. Katz, 1970: 350; see also Dimma, 1985: 251). But the problem of assessing strengths and weaknesses may go deeper still. Might competences not also be distinctive to time, even distinctive to application (Radosevich, 1974: 360; see also Hofer and Schendel, 1978: 148–150)? And can any organization really be sure of its strengths before it tests them, empirically?

The point we wish to make came out most clearly, if inadvertently, in a study carried out at Harvard by Howard Stevenson (1976), published under the title 'Defining corporate strengths and weaknesses'. Starting out with a conventional design school view of these (see p. 53), Stevenson asked managers to assess their companies' strengths and weaknesses *in general*. Overall, 'the results of the study brought into serious question the value of formal assessment approaches.' In general, 'few members of management agreed precisely on the strengths and weaknesses exhibited by their companies' (p. 55). The overall impression left by this study is that the detached assessment of strengths and weaknesses may be unreliable, all bound up with aspirations, biases, and hopes. In fact, Stevenson's managers seemed to understand the problem, their 'most common single complaint' being that strengths and weaknesses have 'to be defined in the context of a problem,' or to quote one of his subjects, 'As I see it, the only real value in making an appraisal of the organization's capabilities comes in the light of a specific deal—the rest of the time it is just an academic exercise' (p. 65).

Every strategic change involves some new experience, a step into the unknown, the taking of some kind of risk. Therefore, no organization can ever be sure in advance whether an established competence will prove to be a strength or a weakness. In its retail diversification efforts, a supermarket chain we studied (Mintzberg and Waters, 1982) was surprised to learn that discount stores, which seemed so compatible with its food store operations, did not work out well, while fast-food restaurants, ostensibly so different, did. The similarities of the discount store business—how products were displayed, moved about by customers, and checked out, etc.—were apparently overwhelmed by the subtle but different characteristics of merchandising—styling, obsolescence, etc. On the other hand, the restaurants may have looked very different, but they moved simple, basic, perishable, commodity-like products through an efficient chain of distribution much like the supermarket business did. The point we wish to emphasize is: how could the firm have known ahead of time? The discovery of what business it was to be in could not be undertaken on paper, but had to benefit from the results of testing and experience. (And the conclusion suggested from such experiences is that strengths generally turn out to be far narrower than expected and weaknesses, consequently, far broader (see Mintzberg and McHugh, 1985)).

Nowhere does this come through more clearly in practice than in attempts at related diversification by acquisition. Obviously no organization can undertake such activity without a prior assessment of its strengths and weaknesses. Yet the vast majority of experiences reported in the popular press and published research suggests that related diversification is above all a learning process, in which the acquiring firm has to make a number of mistakes until it gradually learns what works for it, if it ever does (see Miles, 1982; also Quinn, 1980: 28). And in the writings of academe, the problem is perhaps best illustrated by Levitt's (1960) popular 'marketing myopia' conception, that firms should define themselves by broad mission rather than narrow product or technology (e.g. transportation instead of railroad). The idea was enticing, but in many applications too easy, a cerebral exercise that could detach managers from the realities of the businesses they managed. What, in a few words on a piece of paper, would enable railroads to fly airplanes? Levitt, a marketing professor but here arguing in the spirit of the design school, wrote that 'once it genuinely *thinks* of its business as taking care of people's transportation needs, nothing can stop it from creating its own extravagantly profitable growth' (p. 33; our italics). Nothing except the limitations of its own distinctive competences!

Structure follows strategy . . . as the left foot follows the right

While the design school tends to promote the dictum, first articulated by Chandler (1962), that structure should follow strategy and be determined by it, in fact its model also accepts the opposite. Since the assessment of organizational strengths and weaknesses is an intrinsic part of the model, a basic *input* to strategy formulation, and since structure is a key component of this, housing the organization's capabilities, then structure must play a major role in determining strategy too, by constraining and conditioning it as well as guiding it.

While this may be an obvious point, hardly disputed even within the design school, it does have a broader implication, an important one in our critique of this school's model of strategy formation. No ongoing organization ever wipes the slate clean when it changes its strategy. The past counts, just as does the environment, and the structure is a significant part of that past. Claiming that strategy must take precedence over structure amounts to claiming that strategy must take precedence over the established capabilities of the organization, clearly an untenable proposition. By overemphasizing strategy, and the ability of the stategist to act rather freely, the design school slights, not just the environment, but also the organization itself. Structure may be malleable, but it cannot be altered at will just because a leader has conceived a new strategy. Many organizations have come to grief over just such a belief.

We conclude, therefore, that structure follows strategy as the left foot follows the right in walking. In effect, strategy and structure both support the organization. None takes precedence; each always precedes the other, and follows it, except when they move together, as the organization jumps to a new position. Strategy formation is an integrated system, not an arbitrary sequence.

Making strategy explicit: promoting inflexibility

Once strategies have been created, via the conscious assessment of strengths and weaknesses among other things, then the model calls for their articulation. While recognizing some reasons for not making strategy explicit, this school generally considers an unwillingness to articulate strategy as evidence of fuzzy thinking, or else of political motive. But there are other, often more important, reasons not to articulate strategy, which strike at the basic assumptions of the design school.

The reasons generally given for the need to articulate strategy are, first, that only an explicit strategy can be discussed, investigated, and debated (e.g. Andrews, 1981: 24); second, that only by making strategy explicit can it serve its prime function of knitting people together to 'provide coherence to organizational action' (Rumelt, 1980: 380); and third, that an articulated strategy can generate support—can rally the troops, so to speak, and reassure outside influencers. These all sound like excellent reasons for articulating strategy. And they are—so long as all the conditions are right. The most important of these is that the strategist is sure—knows where he or she wants to go, and has few serious doubts about the viability of that direction. In other words, the design school implicitly assumes conditions of stability or predictability. But organizations have to cope with conditions of uncertainty too. How can Andrews' company come 'to grips with a changing environment' when its 'strategy is [already] known' (1981: 24)? And how can its managers promote the necessary changes when its own board of directors uses that articulated strategy 'to prevent the company from straying off its strategic course' (1980b: 32)?

Our point is that organizations must function not only *with* strategy, but also *during* periods of the formulation and reformulation of strategy, which cannot happen instantaneously. 'It is virtually impossible for a manager to orchestrate all internal decisions, external environmental events, behavioral and power relationships, technical and informational needs, and actions of intelligent opponents so that they come together at a precise moment' (Quinn, 1978: 17). Indeed sometimes organizations also need to function during periods of unpredictability, when they cannot possibly hope to articulate any viable strategy. The danger during such periods is not the lack of explicit strategy but exactly the opposite—'premature closure,' the reification of speculative tendencies into firm commitments. When strategists are not sure, they had better not articulate strategies, for all the reasons given above.

Moreover, even when it makes sense to articulate strategies, because they appear to be viable well into the future, the dangers of doing so must still be recognized. Explicit strategies, as implied in the reasons for wanting them, are blinders designed to focus direction and so to block out peripheral vision. Thus, they can impede strategic change when it does become necessary: to put this another way, a danger in articulating strategy is that while strategists may be sure for now, they can never be sure forever. The more clearly articulated the strategy, the more deeply imbedded it becomes in the habits of the organization as well as the minds of its strategists. There is, in fact, evidence from the laboratories of cognitive psychology that the explication of a strategy—even having someone articulate what he or she is about to do anyway—locks it in, breeding a resistance to later change (Kiesler, 1971).

Another reason not to articulate strategy is that pronouncements of it, often necessarily superficial, can engender a false sense of understanding. Andrews argues that 'a conception of strategy brings simplicity to complex organizations' (p. 554). True enough. But at what price?

The potential danger of a little knowledge needs to be recognized: the possible trivialization and distortion of the subtle needs of a complex organization. As Wrapp has noted, sometimes it is impossible to articulate direction 'clearly enough so that everyone in the organization understands what they mean' (1967: 95). And the problems can magnify when outsiders are involved in the process, even board members. Perhaps that is why Andrews finds such strong managerial resistance to the inclusion of outside board members in strategy-making.

To summarize, the problems of making strategy explicit essentially bring us back to the need to view strategy formation as a learning process, at least in some contexts. Sure strategies must often be made explicit, for purposes of investigation, coordination, and support. The questions are: when? and how? and when not? There is undoubtedly a need for closure at certain points in an organization's history, moments when the process of strategy formation must be suspended temporarily to articulate clear strategies. But this need should not lead us to believe that it is natural for strategies to appear fully developed all of a sudden, nor should it allow us to ignore the periods during which strategies must evolve.

Separation of formulation from implementation: detaching thinking from acting

The formulation–implementation dichotomy is central to the design school—whether taken as a tight model or a loose framework. But is the distinction a valid one for conceptual and analytical, even pedagogical, purposes? In other words, should people concerned with strategy (including students learning about it) *think*, let alone behave, in terms of formulation and implementation?

How can anyone really question this distinction, or even the assumption that formulation must precede implementation? After all, this is just another version of the basic form of rationality that underlies western thinking—in its simplest form, that to act you must first know what you want to accomplish. Think first, then do.

The organizational form that corresponds to this dichotomy is the classical hierarchy, what we prefer to call 'machine bureaucracy' (Mintzberg, 1979). It above all emphasizes the distinction between the few people on top who are allowed to think and the many below who are supposed to act. Machine bureaucracy is common in mass production and the mass provision of services. It dominates thinking in the consulting profession (most of whose techniques promote this form of structure), in big business (outside of high technology), and in government, including the military.

In his article on the dysfunctions of traditional military organization, Feld (1959), noted the sharp distinction that is made between the officers in the rear, who have the power to formulate plans and direct their execution, and the troops on the front, who, despite their first-hand experience, can only implement the plans given them. These 'organizations place a higher value on the exercise of reason than on the acquisition of experience, and endow officers engaged in the first activity with authority over those occupied by the second' (p. 15). This 'is based on the assumption that their position serves to keep them informed about what is happening to the army as a whole . . . [which] is supported by the hierarchical structure of military organization which establishes in specific detail the stages and the direction of the flow of information' (p. 22).

This, in fact, is the assumption fundamental to the formulation–implementation dichotomy: that data can be aggregated and transmitted up the hierarchy without significant loss or distortion. It is an assumption that fails often, destroying carefully formulated strategies in the process.

To use a quotation Feld (p. 15) meant for the military, in how many contemporary organizations do 'the conditions most favorable to rational activity, calm and detachment, stand in direct antithesis to the confusion and involvement' of the factory floor, the salesman's call, the government clerk's service? In how many does detached formulation render the organization ineffective? In how many is critical information ignored because it is deemed 'tactical'? Speaking from Japan, Ohmae goes so far as to suggest that 'separation of muscle from brain may well be a root cause of the vicious cycle of the decline in productivity and loss of international competitiveness in which U.S. industry seems to be caught' (1982: 226).

In recent years there has been a spate of books and articles on implementation (such as Hrebiniak and Joyce, 1984). Noting that few intended strategies are successfully realized—the figure cited by *Fortune* writer Walter Kiechel (1984: 8) that 'fewer than 10 percent of American corporations' implement their intended strategies, was deemed 'wildly inflated' by Tom Peters!—they call for more attention to the implementation process. 'Manage culture,' executives are advised, or 'pay more attention to your control systems.' If one side of the formulation–implementation dichotomy does not work, then effort must be invested in the other.

Majone and Wildavsky point out that to study implementation is to raise 'the most basic question about the relation between thought and action: How can ideas manifest themselves in a world of behavior?' (1978: 103). As they characterize the 'planning-and-control model of implementation,' which sounds to us like the design school model in the public sector, 'good implementation is the irresistible unfolding of a tautology,' or to translate their terms into ours, the transformation of intended strategy into realized strategy through a 'suitable . . . "production function" ', meaning goals, plans and controls, 'and—to take care of the human side of the equation—incentives and indoctrination' (p. 106); 'the perfectly pre-formed policy idea . . . only requires execution, and the only problems it raises are ones of control' (p. 114).

All that would be fine were only the world cooperative. Unfortunately, often it is not, in many cases for good reason, whether the resistance to the intended strategy comes from the environment in which it is to be implemented, the organization that is supposed to do the implementing, or even from the strategy itself.

Sometimes the 'implementors' who make up the rest of the organization are perfectly willing to proceed as directed from the center, but the environment simply renders the strategy a failure. It may change unpredictably, so that the intended strategy becomes useless, or it may remain so unstable that no specific strategy can be useful. Despite implications to the contrary, the external environment is not some kind of pear to be plucked from the tree of external appraisal, but a major and sometimes unpredictable force to be reckoned with.

In other cases it is not the environment but the implementors within the organization who resist. They may, of course, be narrow-minded bureaucrats too wedded to their traditional ways to know a good new strategy when they see one, or small-minded ones who do not understand the new strategy, or bloody-minded ones who prefer to go their own way (e.g. Thoenig and Friedberg, 1976 and Scheff, 1961). But sometimes they are right-minded people who do what they do to serve the organization despite its leadership. They may resist implementation because they know the intended strategies to be unfeasible—that the organization will not be capable of realizing them or, once realized, they will fail in an unsuitable external environment.

Implementational failure can also occur without inhospitable environments and resistant organizations. The problem can lie in the strategy itself; indeed, in part at least, it almost always does. For one thing, no intended strategy can ever be so precisely defined that it covers every eventuality. Moreover, while the formulators may be few, the implementors are typically many, functioning at different levels and in different units and places (Rein and Rabinovitz, 1979: 327–328), each with their own values and interpretations. They are not robots, nor are the systems that control them airtight. The inevitable result is some slipping between formulation and implementation.

'Slippage' is a term used in the public sector to mean that strategic intentions get distorted on their way to implementation; 'drift' is another term used there for realized strategies that differ from intended ones, but within their context (Majone and Wildavsky, 1978: 105; Kress, Koehler and Springer, 1980; Lipsky, 1978). Here, however, we would like to take a position beyond both concepts.

Certainly much formulation is ill-conceived, just as much implementation is badly executed. But often the fundamental difficulty lies not in either side, but in conceiving a distinction between formulation and implementation in the first place.

Behind the premise of the formulation–implementation dichotomy lies a set of very ambitious assumptions: that environments can always be known, currently and for a period well into the future, in one central place, at least by the capable strategists there. To state this more formally, by distinguishing formulation from implementation, the design school draws itself into two questionable assumptions in particular: first, that the formulator can be fully, or at least sufficiently, informed to formulate viable strategies, and second that the environment is sufficiently stable, or at least predictable, to ensure that the strategies formulated will remain viable after implementation. Under some conditions at least, one or the other of these assumptions proves false.

In an unstable environment, or one too complex to be comprehended in a single brain, the dichotomy has to be collapsed, in one of two ways. If the necessary information *can* be comprehended in one brain, but the environment is unpredictable—or perhaps more commonly, takes time to figure out after an unexpected shift—then the 'formulator' may have to 'implement' him or herself. In other words, thinking and action must proceed in tandem, closely associated: the thinker exercises close control over the actions. The leader—here Andrews' *one* strategist (or a small group)—develops some preliminary ideas, tries them out tentatively, modifies them, tries again, and continues until a viable strategy emerges, much as Quinn (1980) described the process, or continues to act even if one does not.

Such close control of a leader over both formulation and implementation is characteristic of the entrepreneurial mode of strategy-making, where power is highly centralized in a flexible organization (Mintzberg, 1973). But, as noted earlier, that mode, because it is rooted in the vagaries of intuition, tends to be dismissed by the design school. True, it may sometimes be 'opportunistic,' as Andrews claims, but such opportunism can be necessary, perhaps in and of itself or more productively perhaps, as a means to experiment and learn. Pascale (1984) provides a marvelous example of the latter in his description of how the Honda Motor Company executives in the United States backed their way into their highly successful motorcycle strategy of the 1960s, in contrast to the Boston Consulting Group's (1975) inference of that strategy as brilliantly deliberate. (In the 1987 textbook (p. vi), Andrews comments that 'Japanese management appears to be more truly strategic than improvisatory.' Perhaps for him, as for the Boston Consulting Group, believing is seeing.)

Where there is too much information to be comprehended in one brain—for example, in organizations dependent on a great deal of sophisticated expertise, as in high-technology firms, hospitals, and universities—then the strategy may have to be worked out on a collective basis. Here, then, the dichotomy collapses in the other direction: the 'implementors' become the 'formulators' (Hardy *et al.*, 1984; Mintzberg and McHugh, 1985). As Lipsky puts it, implementation is 'turned on [its] head' (1978: 397), and actions in good part determine thoughts, so that strategies also emerge.

Both situations—'formulators' implementing and 'implementors' formulating—amount to the same thing in one important respect: the organizations are *learning*. Andrews' great mistake was dismissing organizational learning by considering it opportunism. Even though he recognized the intertwining of formulation and implementation in practice, his making of the distinction *conceptually* led him to underestimate the important role of such learning, individually and especially collectively, over time, in strategy formation. More generally, the design school, by implicitly assuming that strategic learning somehow takes place in one head for a limited period of time and then stops, so that strategies can be articulated and implementation can begin, denied processes that have often proved critical to the creation of novel and effective strategies.

Out of all this discussion comes a whole range of possible relationships between thought and action. There are times when thought does, and should, precede action and guide it primarily, so that, despite some inevitable slippage, the dichotomy between formulation and implementation does hold up, more or less. In other words, while it may be true that 'literal implementation is literally impossible' (Majone and Wildavsky, 1978: 116), sometimes what is achieved is close enough. And here is where we might expect viable application of the design school model.

Other times, however, especially during or immediately after a major unexpected shift in the environment, thought must be so bound up with action in an interactive and continuous process that 'learning' becomes a better label, and concept, for what happens then is 'formulation–implementation'. The organization may be groping its way toward a new strategy, or may simply be coping until things settle down so that it can then do so. (For models of strategy-making as a learning process, see Quinn (1980) on 'logical incrementalism,' Burgelman (1983) on 'corporate entrepreneurship,' Mintzberg and McHugh (1985) on a 'grass roots model,' and Mintzberg (1987) on 'crafting strategy.')

And then, perhaps most common, are a whole range of possibilities in between—'implementation as evolution,' as Majone and Wildavsky (1978) put it—where there is thought, then there is action, this produces learning which alters thought, followed by adjustments to action, and so on. Intended strategies exist, but realized strategies have emergent as well as deliberate characteristics. Here words like 'formulation' and 'implementation' should be used only with caution, as should the design school model of strategy formation.

To conclude this critique, this seemingly innocent model—for Andrews, just an 'informing idea'—in fact contains some ambitious assumptions about the capabilities of organizations and their leaders, assumptions that break down in whole or in good part under many common circumstances.

THE DESIGN SCHOOL AND THE CASE STUDY METHOD

We believe that the relationship between the design school model of strategy formation and the traditional method of case study teaching may help to explain why there has been so much reluctance in certain quarters to adapt the model to other views of strategy-making. The design school model matches perfectly the pedagogical requirements of the case study method, as Andrews and his colleagues note repeatedly. The students are handed a document of 20 or so pages that contains all the available information on the organization in question. They study it the evening before class (alongside the other cases they must prepare for that day), and then appear all ready to argue what it is that General Motors or the John F. Kennedy High School should do.

Bear in mind that time is short: the external environment must be assessed, distinctive competences identified, alternate strategies proposed, and these evaluated, all before class is dismissed in 80 minutes. Two days later it's on to Xerox or Texas Instruments. Here is how the process is described by the senior author of the Harvard textbook:

> how do those of us interested in management education strive to contribute to the development of future general mangers? We do this first by disciplined classroom drill with the concept of strategy. Drill in the formal and analytic—what is the current strategy of the firm? What are its strengths and weaknesses? Where, in the firm's perceived industry, are profit and service opportunity? And, how can those corporate capacities and industry opportunities be effectively related? . . .
>
> Moreover, this analytic classroom process focuses attention on a key administration skill—the process of selecting and ordering data so that management asks the critical questions appropriate to a particular situation (Christensen, in Christensen *et al.*, 1982: ix–x).

But how can a student who has read a short resumé of a company possibly know these things? How can words and numbers on paper possibly substitute for the intimate knowledge of a complex organization? Can the 'critical questions' really be asked through the process of 'selecting and ordering' *this* kind of data? And what effect does this 'drill in the formal and analytic' have on the students when they finally do enter the executive suite?

Given the requirements of case study teaching, how else can the faculty proceed but to keep the model simple, especially to presume that organizations can be quickly and easily understood, and to assume the necessity for fully developed and explicit but nonetheless simple strategies. And even if it is accepted that formulation and implementation are intertwined in practice, what good is that in the classroom where formulation (thinking) is possible while implementation (acting) is not?[13]

Of course, proponents of this school might argue that this is a small price to pay for bringing reality into the classroom, enabling the students to gain exposure to many different organizations. True enough. But need the reality—even the 'reality' of the 20-page case—be dealt with in only this way? Is there not another option, which is to open up the students' perspective beyond the design school model, indeed even to use cases themselves to do so, but written and taught from a broader point of view?

What effect has such case study teaching had on practice, on the generations of managers who have graduated from schools that rely on this pedagogy? If that has left managers with the impression that, to make strategy, they can remain in their offices with documents summarizing the situation and think—formulate so that others can implement—then it may well have done them and their organizations a terrible disservice, encouraging superficial strategies that violate the distinctive competences of their organizations. To quote Livingston (1971), a Harvard professor at the time himself, in his classic article 'The myth of the well-educated manager,' the problem of management education is its 'secondhandedness:' 'Managerial aspirants are required only to explain and defend their reasoning, not to carry out their decisions or even to plan realistically for their implementation;' they 'are rarely exposed to "real" people or to "live" cases,' but rather to 'problems or opportunities discovered by someone else, which they discuss, but do nothing about.' Thus, many 'are not able to learn from their own firsthand experience . . . . Since they have not learned how to observe their environment firsthand or to assess feedback from their actions, they are poorly prepared to learn and grow as they gain experience' (pp. 79, 83, 84, 89).

The fact is that the design school model dominates not only the world of pedagogy, either in its pure form, or as the foundation of the thinking behind the planning and positioning schools; it dominates beliefs in practice too. In other words, 'one best way' thinking is alive and well in the practice of strategic management, and it dictates that formulation must precede implementation, that this formulation must be conscious and controlled, by the chief executive as the architect of strategy, and that the resulting strategies must be deliberate and explicit. Here is how Robert McNamara, also formerly of the Harvard Business School, spelled out his approach to military strategy as Secretary of Defense: 'We must first determine what our foreign policy is to be, formulate a military strategy to carry out that policy, then build the military forces to successfully conduct this strategy' (quoted in Smalter and Ruggles, 1966: 70). He did just this in Vietnam, distant from the realities of the rice paddies and for too long deaf to the calls to learn from the devastating

[13] In his 1987 book, Andrews acknowledges that 'How to get results is harder to teach and to learn in a classroom than on the scene. This difficulty may explain the neglect in business education of the art of implementation in favor of the analysis of potentially ideal strategies' (p. ix).

results. Or consider the comment of one manager about an earlier chief executive of the General Electric Company: 'Borch had a sense that he wasn't looking for lots of data on each business unit, but really wanted 15 terribly important and significant pages of data and analysis' (quoted in Hamermesh, 1986: 191). As noted earlier, the problem may be most acute in diversification by acquisition, which often appear to have been undertaken by detached executives sitting up in executive suites designing strategies quite independently of any intimate understanding of the organization's real strengths and weaknesses.

This 'one best way' thinking applies also to many of the consulting firms that specialize in this field—the so-called 'strategy boutiques.' Called in with limited knowledge of the industry in question, and limited time to find out, the design school provides a most convenient model. To quote from a popular book by two consultants: 'Four or five working days over a two-month period are required to set strategy. Two or three working days are required for the review and one-year update of strategy' (Tregoe and Zimmerman, 1980: 120). There is not a lot of money to be made in saying: 'It's too complicated for us; go back and do your own homework; learn about your industry and your own distinctive competences by immersing yourself in the details and trying things; get many people involved; maybe over a few years you'll be able to develop an effective strategy. It's your responsibility; no one can do it for you.'[14]

As for Andrews' proposals about directors, his claim about 'the power of strategy as a simplifying concept enabling independent directors to *know* the business (in a sense) without being *in* the business' (p. 834) might be more of a problem than a solution. Can anyone, director or student, even manager, really *know* an organization without being *in* it? The time of directors is limited; they must be briefed through short documents and snappy presentations that articulate strategies clearly and simply, so that they can be evaluated on the spot. Case study discussions in the boardroom. But at what cost in strategic thinking? And strategic action?

Andrews claims that 'graduates of a demanding Policy course feel at home in any management situation and know at once how to begin to understand it' (p. 6). But that may be the very essence of the problem. Mary Cunningham is a graduate of the course Andrews had in mind. She may not be typical, but her experience does reveal the problem in its extreme. With a great deal of publicity, Cunningham leaped from the Harvard MBA program to the personal assistantship of William Agee, chief executive of the Bendix Corporation, himself a Harvard MBA. Later she wrote a book on those experiences, entitled *Powerplay* (Cunningham and Schumer, 1984). Kinsley published a scathing review of it in *Fortune* magazine, at one point hitting precisely on the issue under discussion here:

> There is nothing in *Powerplay* to support Cunningham's contention that she is a business genius. Her chapter about learning curves and other B-school buzzwords seems infantile. What little discussion there is of actual business consists mainly of genuflecting in front of a deity called *The Strategy*. The Strategy is what Mary and Bill were up to when nasty-minded people thought they were up to something else. Near as I can tell, it consisted of getting Bendix out of a lot of fuddy-duddy old-fashioned products and into glitzy high tech. What makes this a terribly ingenious idea, let alone a good one, she does not say. But she became very attached to it. 'How's The Strategy going?' she asked Agee the first time they met after her departure from Bendix. And at the book's emotional climax, as Agee realizes he's going to lose control of Bendix to Allied Corp., he says: ' "Of course, you know what this means? . . . The Strategy that we've worked on so hard"—and here he nodded at me—"won't be in our hands." ' And they cry (1984: 142).

If the case study method, based on the design school model, has encouraged leaders to oversimplify strategy, if it has given them the impression that 'you give me a synopsis and I'll

[14] In the early 1980s, frustration with the planning school and technique in particular, seems to have driven a number of practitioners and consultants back to the simpler design school model. Typical is the article by Walker Lewis (1984), founder of Strategic Planning Associates, and entitled 'The CEO and corporate strategy in the 1980s: back to basics.' It rediscovers all the elements of that model; for example, 'the CEO must be an informed generalist;' 'he must foster the building of comparative advantage;' 'good strategic management requires taking the *wide* view . . . it means setting a corporate direction based on . . . a comprehensively developed strategy;' 'In the end, it is the CEO who must serve as the force behind a return to basic integrated strategies in the 1980s;' and 'he must prod the corporation along the path to implementation' (pp. 1, 2, 6). Ironically, Lewis concludes his article with the claim that 'coming to terms with these changes requires more than the old answers' (p. 6), although that is precisely what he offers.

give you a strategy,' if it has denied strategy formation as a long, subtle, and difficult process of learning, if it has encouraged managers to detach thinking from acting, remaining in their offices instead of getting into factories and meeting customers where the real information may have to be dug out, then it may be a major cause of the problems faced by contemporary organizations.

This critique may sound extreme. We do not believe it is; as we shall discuss below, there is much in the design school to recommend it, at least under certain circumstances (indeed much in using cases as pedagogical devices too). But not when it is applied without a depth of understanding of what a particular organization is, and how it must sometimes learn.

THE DESIGN SCHOOL: CONTEXT AND CONTRIBUTION

Our critique has not been intended to dismiss the design school model, but rather the assumption of its universality, that it somehow represents the 'one best way' to make strategy. In particular, we reject the model where we believe strategy formation must above all emphasize learning, notably in circumstances of considerable uncertainty and unpredictability, or ones of complexity in which much power over strategy-making has to be granted to a variety of actors deep inside the organization. We also reject the model where it tends to be applied with superficial understanding of the issues in question.

Andrews thought it sufficient to delineate one model and then add qualifications to it. The impression left was that this was the way to make strategy, although with nuance, sometimes more, sometimes less. But that had the effect of associating strategy-making with deliberate, centralized behavior and of slighting the equally important needs for emergent behavior and organizational learning. Another extreme—what we have elsewhere presented under the label of the 'grass roots model' (Mintzberg and McHugh, 1985)—makes no more sense, since it overstates equally. But by positioning these two at ends of a continuum, we can begin to consider real-world needs along it. In other words it is not Andrews' qualifications that will hold the model in check so much as an alternate depiction of the process. That is why the field of strategic management has need for these different schools of thought, so long as each is considered carefully in its own appropriate context.

Accordingly, we can begin to delineate the conditions that should encourage an organization to tilt toward the design school model end of the continuum. We see a set of four in particular.

1. *One brain can, in principle, handle all of the information relevant for strategy formation.* The assumption of the single strategist sometimes does hold up: a chief executive (perhaps teamed up with other top managers), albeit one who is rather clever and especially adept at synthesis, can take full charge of the process for creating strategy. Here the situation must be relatively simple, involving a base of knowledge that can be comprehended in one brain.
2. *That brain has full, detailed, intimate knowledge of the situation in question.* The potential for centralizing knowledge must be backed up by sufficient access to, and experience of, the organization and its situation to enable the strategist to understand *in a deep sense* what is going on. We might add that he or she can only *know* the organization by truly being *in* the organization. This precludes the image of the case study classroom, the detached CEO with a pithy report, the 'quick-fix' consulting contract, the quarterly directors' meeting, even the weekend retreat of executives (although this may culminate the process). Rather it describes the strategist who has developed a rich, intimate knowledge base over a substantial period of time.
3. *The relevant knowledge is established and set before a new intended strategy has to be implemented—in other words, the situation is relatively stable or at least predictable.* Not only must the strategist have access to the relevant knowledge base, but there must also be some sense of closure on that base: at some point in time, the strategist must know what needs to be known to conceive an intended strategy that will have relevance well beyond the period of implementation. The world must, in other words, hold still, or—what amounts to a much more demanding assumption—the strategist must have the capability to predict the changes that will

come about. What this means is that individual learning must come to an end before organizational action taking can begin. And that can happen effectively only when the future can, in fact, be known.

4. *The organization in question is prepared to cope with a centrally articulated strategy*. For one thing, others in the organization must be willing to defer to a central strategist. For another, they must have the time, the energy, and the resources to implement a centrally determined strategy. And, of course, there has to be the will to do that implementation.

These conditions suggest some clear contexts in which the design school model would seem to apply best—its own particular niche, so to speak, related to time as well as situation. In other words, this is a model to be applied only in certain kinds of organizations, and even there only in certain circumstances. Above all is the organization that needs a major reorientation, a new conception of its strategy. Newman recognized this early, referring to the 'quick reversal,' the 'sharp break' (1967: 117). Or, as Rumelt has put it, 'a good strategy does not need constant reformulation. It is a framework for continual problem solving, not the problem solving itself' (1980: 365; see also Henderson, 1979: 38).

Two conditions would seem to characterize what we call this *period of reconception*. First, there was a major change in the situation that previously supported the existing strategy, so that it has been seriously undermined. And second, there has developed the beginnings of a new stability, one that will support a new conception of strategy. In other words, the *design school model would seem to apply best at the junction of major shift for an organization, coming out of a period of changing circumstances and into one of operating stability*.

We would normally expect the provoking change to be one of a crisis or problem in the external condition of the organization, for example a major realignment of competition, a key shift in market demand, a technological breakthrough. Yavitz and Newman also suggest that what they refer to as 'total reassessment' can be proactive too, triggered, for example, by 'milestones in major programs,' periods when 'large commitments of resources must be made' or 'key uncertainties are resolved,' or simply 'a maximum period since the last full review' (1982: 215–216). Such strategic reassessments may also result from the introduction to the organization of fresh strategic thinking on the part of new leaders.

There is another context where the design school model might apply, and that is the new organization, since it must have a clear sense of direction in order to compete with its more established rivals (or position itself in a niche free of their direct influence). This *period of initial conception* of strategy is, of course, often the product of an entrepreneur with a vision who created the organization in the first place.

Context describes structure as well as time and situation. In the context described above, the structure tends to be simple—flexible, nonelaborated, very responsive to the dictates of a single leader (Mintzberg, 1979: chapter 17). Once under way, however, even simple structures with entrepreneurial leaders may not follow the design school model, even in times of reconception, because the leader's considerable personal discretion (including personal control of 'implementation') allows him or her to change strategy gradually, even continuously, without any need to articulate it. In a way, Andrews recognized this when he sought to distance his model from the entrepreneurial context and its reliance on intuition and 'opportunism.' But in so doing he also distanced it from some of the most creative strategy-making behavior found in organizations.

The structural context Andrews seemed to favor for his model (although he would hardly use the label we are about to apply to it), and the one that appears to be most appropriate for the period of reconception of strategy in an existing organization, is what we call 'machine bureaucracy' (Mintzberg, 1979: chapter 18). This is structure characterized by a centralization of authority and a relatively stable context of operations, typically used in mass production and the mass delivery of services. Machine bureaucracies commonly pursue highly articulated and stable strategies. They therefore require in periods of reconception much of what the design school has to offer: a process whereby someone in central command somehow pulls the new conception together—defines it if not actually creates it—and then articulates it fully at a point in time so that everyone else can implement it and then pursue it.

But there is an interesting anomaly here. The call from the design school for a personalized and creative form of strategic management (one strategist, strategies as novel conceptions) is not really compatible with machine bureaucracy, which tends to rely on standardized procedures and detached forms of control. In other words, machine bureaucracies are not mobiles to effect strategic change but stabiles for the continued pursuit of given strategies. For example, our own research on strategy formation (Mintzberg, 1978; Mintzberg *et al.*, 1986) suggests that chief executives of machine bureaucracies tend to be caretakers of existing strategies—fine-tuners of set directions rather than champions of radically new ones—in part because of the constraints imposed by their own standardized procedures. These organizations are, after all, machines dedicated to the pursuit of efficiency in very specific domains. Indeed, the whole array of mechanisms proposed in the design school's own model of implementation—performance measures, incentive systems, various other control procedures, not to mention the articulation of strategy itself, as noted earlier—once in place act not to promote change in strategy but to resist it. Formal implementation, ironically, impedes reformulation.

Our own evidence (Mintzberg, 1978), as well as that of Miller and Friesen (1984), suggests that major reformulation in machine bureaucracy typically occurs through a form of revolution; power is centralized around a single leader who acts personally and decisively to unfreeze existing practices and impose a new vision. In other words, in such 'turnarounds,' the organization tends to revert to the more flexible simple structure, and to its more entrepreneurial mode of strategy-making, at least until it has developed a new realized strategy, after which it tends to settle back down to its old machine bureaucratic way of functioning.

The implication of this is that while the machine bureaucracy may occasionally require a period of reconception as provided for by the design school model, its own procedures impede the faithful use of that model. In a sense, implementation fits, formulation does not. Indeed, initial use of the model itself discourages later use of it: by articulating strategy and implementing it, as prescribed, the machine bureaucracy finds it difficult to change its strategy later, to reformulate. Thus, the design school model tends here to get 'caught in the middle,' to use Porter's phrase, tilts toward the personalized intuition of entrepreneurship for major reformulation and toward the analysis of planning for the more routine pursuit of strategy. Can we conclude, therefore, that by trying to position the design school model free of intuition on one side and planning on the other, Andrews left it little room for real application, perhaps mainly marginal strategic change in the machine bureaucratic type of organization where leaders can exercise 'judgement' but not rely on intuition or analysis?[15]

As for more complex types of organizations, which depend on expertise for their functioning, as we have argued elsewhere, 'professional bureaucracies' and 'adhocracies' cannot rely on the conventional prescriptive approaches to strategy-making, whether design, planning, or positioning school oriented, but must instead tilt toward the learning end of the continuum, developing strategies that are more emergent in nature through processes that have more of a grass roots orientation (Hardy *et al.*, 1984; Mintzberg and McHugh, 1985).[16]

To conclude, should we take the design school model literally? In assessing the real contribution of this school, perhaps we should not. For while the model (even the framework) may have restricted application and often be overly simplified, this school's contribution as an 'informing idea' has been profound. The design school has provided important basic vocabulary by which we discuss grand strategy, and it has provided the central notion that underlies all prescription in this field, namely that strategy represents a fundamental congruence between external opportunity and internal capability. These important contributions will stand no matter how many of this school's specific premises may fall away.

[15] A study of the cases favored by the design school may be instrumental in this regard. Our own suspicion is that there is probably a predisposition toward mass production or mass service organizations, typically machine bureaucratic in nature, although the role of the intuitive leader in trying to effect turnaround in them in a personalized way may be more evident in the cases than in the theory (e.g. in the J. I. Case case, in Learned *et al.*, 1965: 82–102).

[16] Note that, in describing the strategy-making process favored in different types of organizations, we are further making the case for the impact of structure on strategy (see also Normann, 1977: 9, 19 and Bower, 1970: 286–287).

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