

UNTANGLING DECENTRALIZATION

The words *centralization* and *decentralization* have been bandied about for as long as anyone has cared to write about organizations. Yet they represent probably the most confused topic in management. The terms have been used in so many different ways that they have almost ceased to have any useful meaning.

Here we shall discuss the issue of centralization and decentralization exclusively in terms of power over the decisions made in the organization. When all the power for decision making rests at a single point in the organization—ultimately in the hands of one person—we shall call the structure *centralized*; to the extent that the power is dispersed among many people, we shall call the structure *decentralized*.

Logically, the subject of decentralization would seem to belong with the discussion of the design of the superstructure. Once the units have been designed, it seems appropriate to address the question of what decisions each should make. But it should be evident by now that all this logic—beginning with the mission, determining the positions, their specialization, formalization, and requirements for training and indoctrination, then grouping the positions to build the superstructure, after that determining the distribution of decisional power within it, and finally fleshing the whole thing out with the lateral linkages—has little to do with the practice of organizational design. The relationships among the design parameters are clearly reciprocal, not sequential. The design parameters form an integrated system in which each is linked to all the others: change any one and all the others must be changed as well. Decentralization is discussed last because it is the most complex of the design parameters, the one most in need of an understanding of all the others.

Why Decentralize a Structure?

What prompts an organization to centralize or decentralize its structure? As with most of the issues of structure, this one centers on the question of division of labor versus coordination. **Centralization is the tightest means**

of coordinating decision making in the organization. All decisions are made by one person, in one brain, and then implemented through direct supervision. Other reasons have been given for centralizing structures, but aside from the well-known one of lust for power, most of them amount to the need for coordination.

Why, then, should an organization decentralize? Simply because not all its decisions can be understood at one center, in one brain. Sometimes the necessary information just cannot be brought to that center. Perhaps too much of it is soft, difficult to transmit. How can the Baghdad salesperson explain the nature of his clients to the Birmingham manager? Sometimes the information can be transmitted to one center but cannot be comprehended there. How can the president of the conglomerate corporation possibly learn about, say, 100 different product lines? Even if a report were written on each, he would lack the time to study them all. Sometimes a sophisticated MIS gives the illusion of knowledge without the capacity to absorb it. Simon cites a newspaper report to tell a common story:

The U.S. State Department, drowning in a river of words estimated at 15 million a month to and from 278 diplomatic outposts around the world, has turned to the computer for help. Final testing is under way on a \$3.5 million combination of computers, high-speed printers and other electronic devices. Officials say these will eliminate bottlenecks in the system, especially during crises when torrents of cabled messages flow in from world troubled spots.

When the new system goes into full operation this Fall, computers will be able to absorb cable messages electronically at a rate of 1,200 lines a minute. The old teletypes can receive messages at a rate of only 100 words a minute. (1968:622)

Simon concludes:

A touching faith in more water as an antidote to drowning! Let us hope that Foreign Ministers will not feel themselves obliged to process those 1,200 lines of messages per minute just because they are there. (p. 622)

Perhaps the most common error committed in organizational design is the centralization of decision making in the face of such limitations. The top managers, empowered to design the structure, see errors committed below and believe that they can do better, either because they believe themselves smarter or because they think they can more easily coordinate decisions. Unfortunately, in complex conditions, this inevitably leads to a state known as "information overload": The more information the brain tries to receive, the less the total amount that actually gets through. People at the bottom of the hierarchy with the necessary knowledge end up having to defer to managers at the top who are out of touch with the reality of the situation.

Another, related reason for decentralization is that it allows the organization to respond quickly to local conditions. The transmission of information to the center and back takes time, which may be crucial. The Bank of America once advertised that, by having its "man-on-the-spot," presumably empowered to make decisions, it could provide better service to its clients.

And one last reason for decentralization is that it is a stimulus for motivation. Creative and intelligent people require plenty of room to maneuver. The organization can attract and retain such people, and utilize their initiative, only if it gives them considerable power to make decisions. Such motivation is crucial in professional jobs (and since these are the complex jobs, the professional organization has two good reasons to decentralize). Motivation is also a key factor in most managerial jobs, so some decentralization down the middle line is always warranted. Giving power to middle-line managers also trains them in decision making, so that some day one of them can take over the job of chief executive, where the most difficult decisions must be made.

Some Conceptual Cuts at Centralization/Decentralization

So far, all this seems clear enough. But that is only because we have not yet looked inside that black box called decentralization. The fact is that no one word can possibly describe a phenomenon as complex as the distribution of power in the organization. Consider the following questions:

- Which is more centralized: a library called "centralized" because it is in one place, although most of the decision-making power is dispersed to its department heads; or a "decentralized" library system, consisting of widely scattered satellite libraries, where the chief librarian of each guards all the power, sharing it with none of the other employees?
- How about the organization where decision-making power is dispersed to a large number of people but, because their decisions are closely monitored by a central individual who can fire them at a moment's notice, they make those decisions with careful assessment of his wishes? Or the case of the Jesuit priest or CIA agent who has complete autonomy in the field, except that he has been carefully indoctrinated to decide in a given way before he ever left the central headquarters? Are these organizations decentralized?
- In the United States, divisionalized corporations that rely on performance control systems for coordination are called "de-

centralized," whereas Americans are in the habit of calling the communist economies "centralized," even though they are organized like giant divisionalized corporations that rely on performance control systems for coordination. Which is it?

- Does standardization of the work process bring about centralization or decentralization? When a worker, because he is subject to a great many rules, is left free of direct supervision, can we say that he has power over his decisions? More generally, are bureaucracies centralized or decentralized? How about the one Crozier describes, where the workers force through rules that reduce the power of their managers over them, with the result that both end up in straitjackets?
- What about the case where a line manager has the authority to make a decision, but his advisors, by virtue of their superior technical knowledge, lead him into his choices? Or the case where the manager decides but, in executing the choices, his subordinates twist the outcome to their liking? Are these organizations centralized by virtue of the distribution of the formal power, or decentralized by virtue of the distribution of the informal?
- Finally, what about the organization where some decisions—say, those concerning finance and personnel—are made by the chief executive, and others—say, those in the areas of production and marketing—are dispersed to managers lower down? Is it centralized or decentralized?

The answer to these questions is that there is no simple answer, that unqualified use of the term *centralization* or *decentralization* should always be suspect. Yet a great deal of the research and discussion on organization structure has used them in just that way.

So the waters of decentralization are dirty. But before spilling them away, it may be worthwhile to see if we can find a baby in there.

Our list of questions seems to indicate two major points about the concept. First, **centralization and decentralization should not be treated as absolutes, but rather as two ends of a continuum.** The Soviet economy is not "centralized," just more centralized than a capitalist economy; the divisionalized firm is not "decentralized," just more decentralized than some firms with functional structures.¹ Second, much of the confusion seems to stem from the presence of a number of different concepts fighting for recognition under the same label. Perhaps it is the presence of two or even three babies in that bathwater that has obscured the perception of anyone.

¹Although we shall see that the opposite is frequently the case, the rhetoric notwithstanding.

Below we discuss three uses of the term *decentralization* and retain two for our purposes. Each is discussed at length in the body of this chapter, and together they are used in a summary section to develop a framework of five basic kinds of decentralization commonly found in organizations.

Three uses of the term decentralization

The term *decentralization* seems to be used in three fundamentally different ways in the literature:

1. First is the dispersal of formal power down the chain of authority. In principle, such power is vested in the first instance in the chief executive at the strategic apex. Here it may remain, or the chief executive may choose to disperse it—*delegate* is a common synonym for this kind of decentralization—to levels lower down in the vertical hierarchy. **The dispersal of formal power down the chain of line authority will be called vertical decentralization.**
2. Decisional power—in this case, primarily informal—may remain with line managers in the system of formal authority, or it may flow to people outside the line structure—to analysts, support specialists, and operators. **Horizontal decentralization will refer to the extent to which nonmanagers control decision processes.**²
3. Finally, the term *decentralization* is used to refer to the physical dispersal of services. Libraries, copying machines, and police forces are "centralized" in single locations or "decentralized" to many, to be close to their users. But this "decentralization" has nothing per se to do with power over decision making (the satellite library, like the copying machine, may not make the decisions that most affect it). Thus, this third use of the term only serves to confuse the issue. In fact, we have already discussed this concept in Chapter 3, using the terms *concentrated* and *dispersed* instead of *centralized* and *decentralized*. In this book, the term *decentralization* will not be used to describe physical location.

This leaves us with two essential design parameters: vertical and horizontal decentralization. Conceptually, they can be seen to be distinct. Power can be delegated down the chain of authority and yet remain with line managers; the ultimate case of this vertical decentralization with hori-

²For purposes of our definition, managers of staff units are included among nonmanagers. Note that the term *horizontal* correctly describes this flow of power to analysts and support specialists as they are shown in our logo. The operators are, of course, shown below the vertical chain of authority but, for convenience, are also included in our definition of horizontal decentralization.

zontal centralization would give all the power to the first-line supervisors. Alternatively, senior staff people could hold all the power. Centralization of both types occurs when the strategic apex keeps all the power; decentralization of both sees power pass all the way down the chain of authority and then out to the operators.

But power over all decisions need not be dispersed to the same place. This gives rise to two other kinds of decentralization. In **selective decentralization, the power over different kinds of decisions rests in different places in the organization.** For example, finance decisions may be made at the strategic apex, marketing decisions in the support units, and production decisions at the bottom of the middle line, by the first-line supervisors. **Parallel decentralization refers to the dispersal of power for many kinds of decisions to the same place.** For example, finance, marketing, and production decisions would all be made by the division managers in the middle line.

But before we can begin our discussion of the kinds of decentralization found in organizations, we need to consider one more issue. Even within a single decision process, the power wielded by different people can vary. We need a framework to understand what control over the decision process really means.

What matters, of course, is not control over decisions per se but ultimately control over actions—what the organization actually does, such as marketing a new product, building a new factory, hiring a new mechanic. And actions can be controlled by more than just making choices. Power over any step in the decision process, from initiating the original stimulus to driving the last nail in the final execution of it, constitutes a certain power over the whole process.

Paterson provides us with a useful framework for understanding this issue. He depicts the decision process as a number of steps, as shown in modified form in Figure 5-1: (1) collecting *information* to pass on to the decision maker, without comment, about what can be done; (2) processing that information to present *advice* to the decision maker about what should be done; (3) making the *choice*—that is, determining what is intended to be done; (4) *authorizing* elsewhere what is intended to be done; and (5) doing it—that is, *executing* what is, in fact, done. The power of an individual is then determined by his control over these various steps. His power is

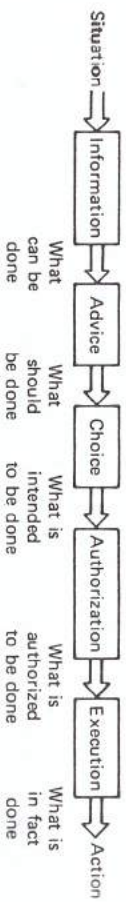


Figure 5-1. A continuum of control over the decision process (similar to Paterson, 1969:150)

maximized—and the decision process most centralized—when he controls all the steps: when he collects his own information, analyzes it himself, makes the choice, need seek no authorization of it, and then executes it himself. As others impinge on these steps, he loses power, and the process becomes decentralized.

Control over input information enables another person to select what factors will—and will not—be considered in the decision process. When information is filtered extensively, such control can be tantamount to control over the choice itself. More important still is the power to advise, since it directs the decision maker down a single path. Classical line/staff distinctions notwithstanding, there are times when the separation between giving advice and making the choice is fine indeed. History tells us of kings who were virtual figureheads, while their advisors—a Richelieu in France, a Rasputin in Russia—controlled the affairs of state. Control over what happens after the choice has been made can also constitute power. The right to authorize a choice is, of course, the right to block it or even change it. And the right to execute a choice once made often gives one the power to twist or even distort it. Newspapers carry accounts every day of how the “bureaucrats” misdirected the intentions of the politicians and ended up doing what they thought best in the first place. In effect, the decisions ended up being theirs.

And so, a decision process is most decentralized when the decision maker controls only the making of the choice (the least he can do and still be called decision maker): In the organizational hierarchy, he loses some power to the information gatherers and advisors to his side, to the authorizers above, and to the executors below. In other words, control over the making of choices—as opposed to control over the whole decision process—does not necessarily constitute tight centralization. With this in mind, let us now look at vertical and horizontal decentralization.

Vertical Decentralization

Vertical decentralization is concerned with the delegation of decision-making power down the chain of authority, from the strategic apex into the middle line. The focus here is on formal power—to make choices and authorize them—as opposed to the informal power that arises from advising and executing. Three design questions arise in vertical decentralization:

1. What decision powers should be delegated down the chain of authority?
2. How far down the chain should they be delegated?
3. How should their use be coordinated (or controlled)?

These three questions turn out to be tightly intertwined. Let us consider first some evidence on selective decentralization down the chain of authority. Dale (cited in Pffiffer and Sherwood, 1960:201) and Khandwalla (1973a) found that corporations tend to delegate power for manufacturing and marketing decisions farther down the chain of authority than they do power for finance and legal decisions. Lawrence and Lorsch (1967) found that power for a decision process tends to rest at that level where the necessary information can best be accumulated. For example, in the plastics industry, research and development decisions involved very sophisticated knowledge that was at the command of the scientist or group leader in the laboratory but was difficult to transfer up the hierarchy. Hence, these decisions tended to be made at relatively low levels in the hierarchy. In contrast, manufacturing decisions tended to be made at higher levels (plant manager), because the appropriate information could easily be accumulated there. Marketing decisions fell in between these two.

These findings, in effect, describe the organization as a system of work constellations, our fourth overlay of Chapter 1. Each constellation exists at that level in the hierarchy where the information concerning the decisions of a functional area can be accumulated most effectively. Combining these findings in Figure 5-2, we come up with four work constellations overlaid on our logo—a finance constellation at the top, a manufacturing constellation below that, then a marketing constellation, and finally the research and development constellation. Thus, selective vertical decentralization is logically associated with work constellations grouped on a functional basis. (Note that the decentralization in this case can be horizontal as well as vertical; staff groups at different hierarchical levels are shown involved in the top three constellations, and the fourth is exclusively staff.)

But such selective decentralization leaves important interdependencies to be reconciled, which raises the question of coordination and control. Direct supervision may be used to some extent, specifically by having the decisions of each work constellation authorized, and therefore coordinated, by the managers at the strategic apex. But too great a reliance on this form of coordination would be tantamount to recentralizing the decision processes and thereby canceling the advantages of selective decentralization. The same is true for the standardization of work processes or outputs, since that transfers power over the decision processes from all the constellations to the technostucture, which amounts to horizontal centralization instead of vertical decentralization. So although it may make some use of activity planning, in the final analysis, the organization that is selectively decentralized in the vertical dimension will coordinate its decision making largely by mutual adjustment. Specifically, it will place heavy emphasis on the use of the liaison devices.

The situation is quite different for parallel decentralization in the vertical dimension. This kind of decentralization does away with decision

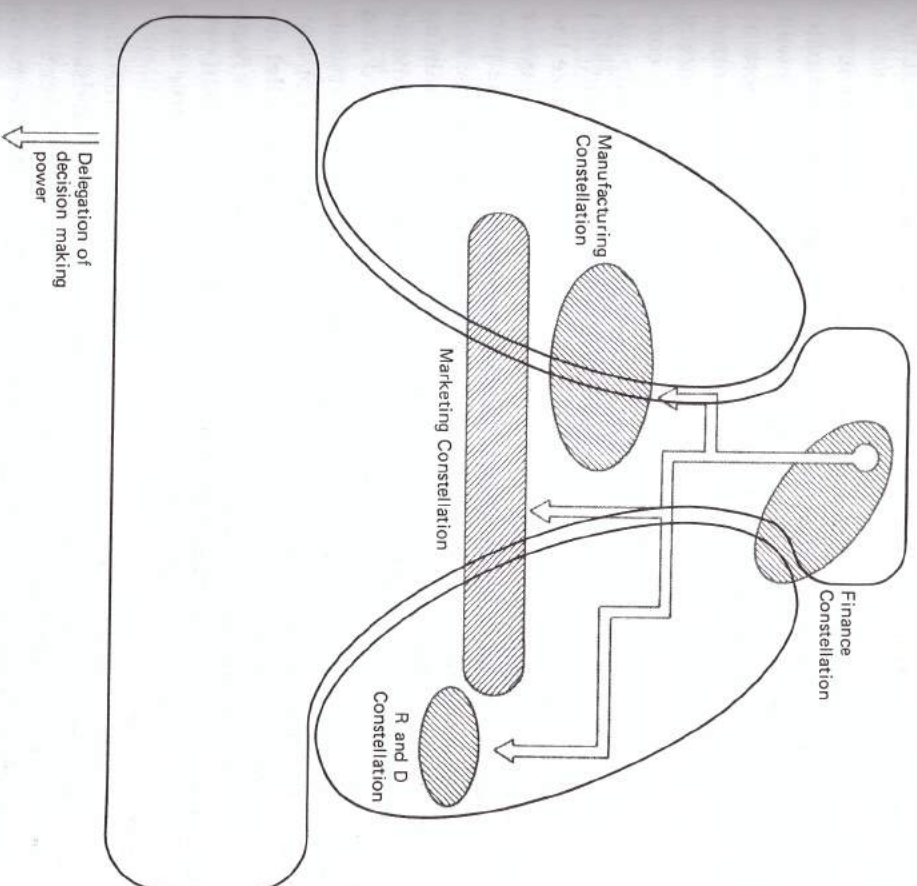


Figure 5-2. Selective decentralization to functional work constellations

interdependencies: power for the different functional decisions is focused at a single level in the hierarchy, specifically within units grouped on the basis of market. This is the structure known as “divisionalized” in the corporate sector. Each unit or division is decoupled from the others and given the power necessary to make all those decisions that affect its own products, services, or geographical areas. In other words, parallel vertical decentralization is the only way to grant market-based units the power they need to function in a quasi-autonomous manner. (Of course, such vertical decentralization must always be somewhat selective. That is, some decision-making power is always retained at the strategic apex. The divisionalized corporation typically delegates marketing and manufacturing

decisions to the divisions but keeps finance and acquisition decisions at the strategic apex.)

With the extensive autonomy of each market-based unit, there is no need to encourage mutual adjustment or action planning to coordinate work across them. What is important is to ensure that the autonomy is well used, that each market unit contributes to the goals considered important by the strategic apex. So the strategic apex faces the delicate task of controlling the behavior of its market units without restricting their autonomy unduly. Three coordinating mechanisms present themselves for such control—direct supervision and the standardization of skills and of outputs. (The standardization of work processes would obviously be too restrictive.)

There is some room for direct supervision, notably to authorize the major expenditures of the units and to intervene when their behavior moves way out of line. But too much direct supervision defeats the purpose of the decentralization: the strategic apex comes to manage the unit instead of its own manager. The standardization of skills, through training and indoctrination, can also be used to control the behavior of the manager of the market unit. He may, for example, be carefully indoctrinated and then sent out to run it with considerable autonomy. But there typically remains the need to monitor behavior—to find out when it is out of line. And that is typically left to the performance control system. **Parallel decentralization in the vertical dimension (to market-based units) is regulated primarily by performance control systems.** The units are given performance standards, and as long as they meet them, they preserve their autonomy.

But does parallel vertical decentralization to market-based units constitute “decentralization”? In the corporate world, the terms “divisionalization” and “decentralization” have been used synonymously ever since Alfred P. Sloan reorganized General Motors in the 1920s under the maxim “decentralized operations and responsibilities with coordinated control” (Chandler, 1962:160; see also Sloan, 1963). Faced with a structural mess left by William C. Durant, who had put the legal entity together through a series of acquisitions but had never consolidated it into a single organization, Sloan established product divisions with some operating autonomy but maintained tight financial controls at headquarters. A number of large corporations followed suit, and today the divisionalized structure is the most popular one among the largest American corporations. But does divisionalization constitute decentralization? Not at all; it constitutes the vesting of considerable decision-making power in the hands of a few people—the market unit managers in the middle line, usually near the top of it—nothing more. That is, **divisionalization constitutes a rather limited form of vertical decentralization.** These managers can, of course, delegate their power farther down the chain of authority, or out to staff specialists. But nothing requires them to do so. To paraphrase Mason Haire (1964:226),

“decentralization” can give a manager the autonomy to run a “centralized” show.¹³ Thus, we should not be surprised when the same structure in a different context—the communist economy—is called centralized. A structure—capitalist or communist—in which a few division managers can control decisions that affect thousands or even millions of people can hardly be called decentralized, although it is certainly more so than one in which these decisions are made by even fewer managers at the strategic apex.

Horizontal Decentralization

Now we turn to the question of horizontal decentralization—namely, to the shift of power from managers to nonmanagers (or, more exactly, from line managers to staff managers, analysts, support specialists, and operators). An assumption in our discussion of vertical decentralization was that power—specifically formal power, or authority—rests in the line structure of the organization, in the first instance at the strategic apex. Vertical decentralization dealt with the delegation of that power down the chain of authority, at the will of the top managers.

When we talk of horizontal decentralization, we broaden the discussion in two regards. First, in discussing the transfer of power out of the line structure, we move into the realm of informal power, specifically of control over information gathering and advice giving to line managers and the execution of their choices, as opposed to the making and authorizing of these choices. And second, in discussing horizontal decentralization, we drop the assumption that formal power necessarily rests in the line structure, in the first instance at the strategic apex. Here formal power can rest elsewhere—for example, with operators who are empowered to elect the managers of the strategic apex.

Assuming the presence of managers, analysts, support staff, and operators, we can imagine a continuum of four stages of horizontal decentralization, listed below:

1. Power rests with a single individual, generally by virtue of the office he occupies (i.e., a manager).
2. Power shifts to the few analysts of the technostucture, by virtue of the influence their systems of standardization have on the decisions of others.

¹³That that raises a dilemma for the manager up above who prefers more decentralization. “Can he pull back the autonomy and order the subordinate to push decentralization down further? Or will this centralized intervention to further decentralization destroy the decentralization?” (Haire, p. 226)

3. Power goes to the *experts*—the analytic and support staff specialists, or the operators if they are professional—by virtue of their *knowledge*.
4. Power goes to *everyone* by virtue of *membership* in the organization.

Thus, in the most horizontally centralized organization, one person holds all the power, typically the top manager. Of course, even here, there can be variations according to how open that person is to advice. There is a difference between the “omnicompetent, aloof, imperial ruler,” such as the Byzantine emperor, and the “omnicompetent but very accessible and responsive leader,” such as a John F. Kennedy (Kochen and Deutsch, 1973:843). Hereafter, we find different degrees of horizontal decentralization, first to a few analysts whose systems control the behavior of others, then to all the experts with knowledge, and finally to everybody just because everybody is a member of the organization. The first case requires no further discussion; let us therefore consider the other three in turn.

Power to the analysts

When an organization relies on systems of standardization for coordination, some power must pass out from the line managers to the designers of those systems, typically the analysts of the technostucture. How much power, of course, depends on the extent and the kind of standardization. Obviously, the more the organization relies on systems of standardization for coordination, the greater the power of the analysts. Soviet government planners have more power than their American counterparts; the work-study analysts of an automobile company are more influential than those of a hospital. And the tighter the kind of standardization, the more powerful the analysts. By that token, job designers and work-study analysts—those who tell workers *how* to produce by standardizing their work processes—should typically have more power than production schedulers and planners—those who only tell them *what* and *when* to produce by standardizing their outputs. And trainers—those who teach people to produce by standardizing their skills—should have less power still. Thus, the factory worker would normally perceive the work-study analyst as the greatest threat to his autonomy, followed by the production scheduler and then the trainer.⁴

Who surrenders power to the analysts? Obviously, those whose work is standardized, such as the operator who loses the power to choose his work process, or the manager who loses the power to decide on his unit's

⁴However, to the extent that planners and trainers direct their efforts at people higher up in the structure, they can be more influential. Moreover, we should not forget that much of the training takes place outside the organization. We shall return to this point later in the chapter.

outputs. But so, too, do the managers of these people: as noted earlier, their jobs became institutionalized, technocratic standardization replacing their power of direct supervision.

This leads us to two important conclusions. First, **power to the analysts constitutes only a limited form of horizontal decentralization.** Only a few nonmanagers—these designers of the technocratic systems—gain some informal power, and that at the expense of the many operators and others whose behavior and outputs are standardized. And second, this kind of **limited horizontal decentralization in fact serves to centralize the organization in the vertical dimension, by reducing the power of the lower-line managers relative to those higher up.** In other words, **organizations that rely on technocratic standardization for coordination are rather centralized in nature, especially in the vertical dimension but also somewhat in the horizontal.**

Are bureaucracies centralized? This has been a controversial question in the research literature. As we have seen, the research has not been conclusive. Some researchers have argued that bureaucratic work standards, by limiting the power of the manager to exercise direct supervision, thereby give more power to the workers. The work of Crozier suggests quite a different conclusion: that both end up in a straitjacket, with decision-making power flowing up to a remote central headquarters.

We can sort out much of this confusion by discussing centralization in terms of our five coordination mechanisms. Those who see work rules as giving rise to decentralization seem to equate centralization with direct supervision: an organization is centralized if direct supervision is close; to the extent that work standards replace direct supervision, the organization becomes decentralized. But calling a bureaucracy decentralized because work rules instead of managers control the workers is like calling puppets purposeful because computers instead of people pull their strings.

Direct supervision may be the tightest coordinating mechanism, and therefore close control by managers may constitute the tightest form of horizontal centralization. Any move the individual makes can bring a rap on the knuckles from the boss: “That is not the way I expected you to do it.” And standardization of work processes may provide the employee with more autonomy, since he knows what he can and cannot do. But that does not mean that it is a loose coordinating mechanism. Of course, if the rules are few, the employee has considerable discretion. But we are here discussing organizations where the rules are many—bureaucracies that rely on such rules for coordination, and so proliferate them. The important point is that reliance by the organization on any of the other coordinating mechanisms would yield its employees more freedom still in their work. That would happen if their outputs were standardized and they were allowed to choose their own work processes. Better still, if their work was coordinated by the standardization of skills, they would be trained and

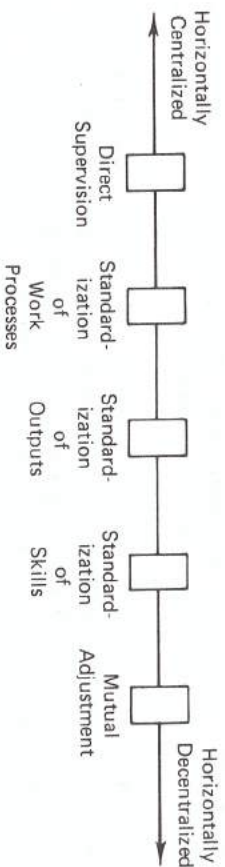


Figure 5-3. The coordinating mechanisms on a continuum of horizontal decentralization

indoctrinated before they started to work and thereafter would be left alone to choose their work processes and determine their outputs as they saw fit. And best of all would be the absence of standardization and direct supervision altogether; the employees would be completely free to work out their own coordination by mutual adjustment.

In other words, as shown in Figure 5-3, the coordinating mechanisms form a continuum, with direct supervision the most horizontally centralizing and mutual adjustment the least, and with the three forms of standardization—first work processes, then outputs, finally skills—falling in between. And because standardization of work processes falls next to direct supervision as the second most centralizing coordinating mechanism, we conclude that organizations that rely on this mechanism for coordination are relatively centralized. Specifically, such organizations give a certain amount of power to their analysts to design the standards, and as we have just concluded, such power to the analysts means vertical centralization coupled with only limited horizontal decentralization.

But to tie up a loose end, we cannot say that all bureaucracies are centralized. These particular bureaucracies are—the ones that rely on the standardization of *work processes* to coordinate the work of their unskilled operators. But earlier we came across a second kind of bureaucracy, one with professional operators who coordinate their work by the standardization of their skills. And because this coordinating mechanism falls near the decentralization end of our Figure 5-3 continuum, we can conclude that this second kind of bureaucracy is relatively decentralized in the horizontal dimension. We shall return to it below.

Power to the experts

In this stage of horizontal decentralization, the organization is dependent on specialized knowledge. So it must put its power where its knowledge is—namely, with the experts, whether they be in the technostucture, support staff, operating core, or, for that matter, middle line. “In the world of blind men, the one-eyed man is king.” The surgeons dominate the operating rooms, the Wernher von Brauns rule the space agencies. In the

previous discussion, there was only one recognized expert—the analyst—and his power was informal. But here the organization draws on the knowledge of a wider array of experts and begins to formalize more and more of the power it gives to them. The experts do not merely advise; they come to participate actively in making decisions.

How dependent the organization is on its experts and where they are found in its structure determine how much power they can accumulate. We can identify at least three types of expert power.

1 *Informal expert power superimposed on a traditional authority structure.* In the least horizontally decentralized type, the system of formal authority remains intact; that is, formal power remains in the hierarchy of line managers. But to the extent that the organization has need of specialized knowledge, notably because certain decisions are highly technical ones, certain experts attain considerable informal power. Thus, the maintenance men ruled the tobacco factories Crozier studied because only they could handle the one major source of uncertainty.

These experts made choices. Others gain informal power by virtue of the advice they give managers before choices are made, especially technical choices that the managers do not understand. The authorization step of decision making, often carried out as part of a capital budgeting process, lends itself to the manipulation of managers by experts. The sponsor of a decision or project, that person who first decided to proceed with it, has the expert knowledge of it but also has a strong commitment to see it authorized. The manager above, who must do the authorizing, can be more objective in his assessment of the project, but he lacks the detailed knowledge of it and the time to get it. So the situation is ripe for manipulation. In effect, systems of capital budgeting often fail because they cannot put the formal power for authorization where the required knowledge of the project is.

2 *Expert power merged with formal authority.* As expertise becomes increasingly important in decision making, the distinction between line and staff—between the formal authority to choose on the one hand and the expertise to advise on the other—becomes increasingly artificial. Eventually, it is done away with altogether, and line managers and staff experts join in task forces and standing committees to share decision-making power. A good example is the new-product group that brings together marketing, manufacturing, engineering, and research personnel from the technostucture, middle line, and support staff. Power within the group is based not on position but on expertise; each person participates according to the knowledge he can bring to the decision in question. This situation of expert power merged with formal authority amounts, therefore, to selective decentralization in the horizontal dimension, the experts

having power for some decisions but not for others. In fact, reference back to Figure 5-2, where various functional work constellations were overlaid on our logo, suggests a link to selective decentralization in the vertical dimension. In other words, **selective decentralization seems to occur currently in both the horizontal and vertical dimensions.**

3 Expert power with the operators. In this third and most decentralized case of expert power, the operators themselves are the experts. And this expertise vests in them considerable power, which in turn decentralizes the organization in both dimensions: power rests in the operating core, at the bottom of the hierarchy with nonmanagers. Of course, expert operators are professional ones, which leads us to a rather important relationship, one that is well supported in the research: **the more professional an organization, the more decentralized its structure in both dimensions.** This brings the issue of bureaucracy and centralization into sharper focus. We can now see the two kinds of bureaucracy emerging clearly, one relatively centralized, the other decentralized. The first is bureaucratic by virtue of the work standards imposed by its own technostucture. Its operating work is specialized but unskilled. It is relatively *centralized* both vertically and horizontally, because most of its decision-making power rests with its senior managers and the small number of analysts who formalize the behavior of everyone else. In the second, the operating core is staffed with professionals. It is bureaucratic by virtue of the standards imposed on it from the outside, by the professional associations that train its operators and later impose certain rules to govern their behavior. But because the professionals require considerable autonomy in their work, and because coordination is effected primarily by the standardization of skills—a coordinating mechanism shown near the decentralization end of the Figure 5-3 continuum—this second bureaucracy is rather decentralized in both dimensions. That is, power rests with the operators at the bottom of the hierarchy.

Power to everyone

The theme of our discussion so far has been that power in the hands of the managers constitutes horizontal centralization; that bureaucratization through the formalization of behavior puts some power into the technostucture and thereby constitutes a limited form of horizontal decentralization; and that the more that power is attributed to knowledge as opposed to position, the more the structure becomes horizontally decentralized, culminating in the professional organization whose operators control much of the decision making.

But, in theory at least, that is not the ultimate case of decentralization. Professional organizations may be meritocratic but they are not demo-

cratic. As long as knowledge is not uniformly dispersed, so too will power not be evenly distributed. One need only ask the orderlies (or even the nurses) of the hospital about their status vis-à-vis the doctors.

Decentralization is complete when power is based not on position or knowledge, but on membership. Everyone participates equally in decision making. The organization is democratic.

Does such an organization exist? The perfectly democratic organization would settle all issues by something corresponding to a vote or consensus. Managers might be elected to expedite the members' choices, but they would have no special influence in making them. Everyone would be equal. Certain volunteer organizations—such as Israeli kibbutzim or private clubs—approach this ideal, but can more conventional organizations?

"Industrial democracy" has received considerable attention in Europe recently. In Yugoslavia, workers own many of the enterprises and elect their own managers. In France, there has been much talk of "autogestion" (self-management). In Germany, half the seats on the boards of directors of the larger corporations are by law reserved for workers' representatives.

The evidence from these efforts suggests, however, that these steps do not lead to pure democratization, or anything close to it. Thus, in their excellent review of worker participation in eight countries of Europe, Asia, and the Middle East, Strauss and Rosenstein conclude:

1. Participation in many cases has been introduced from the top down as a symbolic solution to ideological contradictions;
2. Its appeal is due in large part to its apparent consistency with both socialist and human relations theory;
3. In practice it has only spotty success and chiefly in the personnel and welfare rather than in the production areas;
4. Its chief value may be that of providing another forum for the resolution of conflict as well as another means by which management can induce compliance with its directives. (1970:171)

These reviewers and others suggest that workers are not really interested in issues that do not pertain directly to their work. Most surprisingly, participation has been shown in some studies to strengthen the hand of top management at the expense of other groups, "to bypass middle management, to weaken the staff function, and to inhibit the development of professionalism" (p. 186). Paradoxically, industrial democracy seems to centralize the organization in both the vertical and horizontal dimensions. (A probable reason for this will be discussed in the next chapter.)

Crozier describes another kind of organizational democracy, which seems to have a similar effect. In this case, as noted earlier, the workers

institute rules that delimit the power their superiors have over them. That renders the two equal—superior and subordinate are locked into the same straitjacket (except for the maintenance men of the tobacco factories, who exploited that last remaining bit of uncertainty). Power for decision making in turn reverts up to the organization's headquarters. The resulting structure is, in a sense, doubly bureaucratic—there being the usual rules to coordinate the work as well as special ones to protect the workers. And doubly bureaucratic in this case means, in the same sense, doubly centralized. So what results is a perverse kind of democracy indeed, the organization emerging as more bureaucratic and more centralized than ever, its extreme rigidity rendering it less able to serve its clients or to satisfy the higher-order needs of its workers.

These movements in organizational democracy have barely touched the United States. What has received considerable attention there instead is "participative management." In discussion of this concept, two of its propositions should be clearly distinguished. One, of a factual—that is, testable—nature, is that participation leads to increased productivity: "Involve your employees and they will produce more," management has been told by a generation of industrial psychologists. The other, a value proposition and so not subject to verification, is that participation is a value worthy in and of itself: "In a 'democratic' society, workers have the right to participate in the organizations that employ them." The American debate over participative management has focused almost exclusively on the first, factual proposition (although the proponents seem really to be committed to the second, value position). In the light of this focus, it is interesting that the factual proposition has not held up in much of the research. Studies by Fiedler (1966) and other have indicated that participation is not necessarily correlated with satisfaction or productivity. Those relationships depend on the work situation in question.

In any event, participative management can hardly be called democratization, since it is based on the premises that the line manager has the formal power and that he chooses to share it with his employees. He calls on them for advice and perhaps to share in the making of choices as well. But democracy does not depend on the generosity of those who hold formal power; instead, it distributes that power constitutionally throughout the organization.

So far, we have found little to encourage the proponents of organizational democracy. It may work in volunteer organizations, but attempts to achieve it in more conventional ones seem only to foster more centralization.

Before leaving the subject, we might mention another body of research that has shed light on the question. Social psychologists have conducted a number of "communication net" studies in which they have put a

few subjects (often five) into networks of more or less restricted channels of communication, given them simple tasks to perform, and then watched what happened. In some networks, all the members had to pass their messages through one person (this was the hierarchical one); in others, they formed a circle and could communicate only with members to either side of them; in some, everyone could communicate freely with everyone else (the closest equivalent to democracy); and so on. Many of the results were expected—for example, that the hierarchical networks organized more quickly and made fewer errors, but that their members at the periphery enjoyed the task less than did the ones at the center. An unexpected finding, however, at least in one study (Guetzkow and Simon, 1954–55), was that the open-channel networks developed hierarchies by themselves (in 17 of 20 cases).

These findings suggest some interesting conclusions about horizontal decentralization. For one thing, the centralized organization may be more efficient under certain circumstances, particularly at early stages of the work. In contrast, the horizontally decentralized organization—the democratic one—seems better for morale. But the latter may sometimes be unstable, eventually reverting to a more hierarchical—and centralized—structure to complete its tasks. This, in fact, is exactly what the field studies indicate: that democratization leads, paradoxically, to centralization.

So the answer to our question about democracy seems to be negative. Attempts to make centralized organizations democratic—whether by having the workers elect the directors, encouraging them to participate in decision making, instituting rules to delimit the power of their managers, or establishing unrestricted communication channels—all seem to lead, one way or another, back to centralization. Note that all the experiments have taken place in organizations that do simple, repetitive, unskilled tasks. A laboratory group cannot be asked to design a thermonuclear reactor, let alone deliver a baby. Likewise, organizational democracy has not been a burning issue in research laboratories or hospitals; the attention has been focused on automobile plants, tobacco factories, and the like, organizations staffed largely with unskilled operators. Here is where the workers have had the least decision-making power and have been the most alienated. And here, unfortunately, is where attempts to tamper with the power system—to make it more democratic—seem to have failed the most dramatically.

Other organizations come closer to the democratic ideal—namely, those with professional operators, such as research laboratories and hospitals. They distribute their power widely. But not because anyone decided that participation was a good thing. And not so widely that every member shares power equally. Power follows knowledge in these organizations, which itself is distributed widely but unevenly. Thus, it seems that, at best,

we shall have to settle for meritocracy, not democracy, in our nonvolunteer organizations, and then only when it is called for by tasks that are professional in nature.

Decentralization in Fives

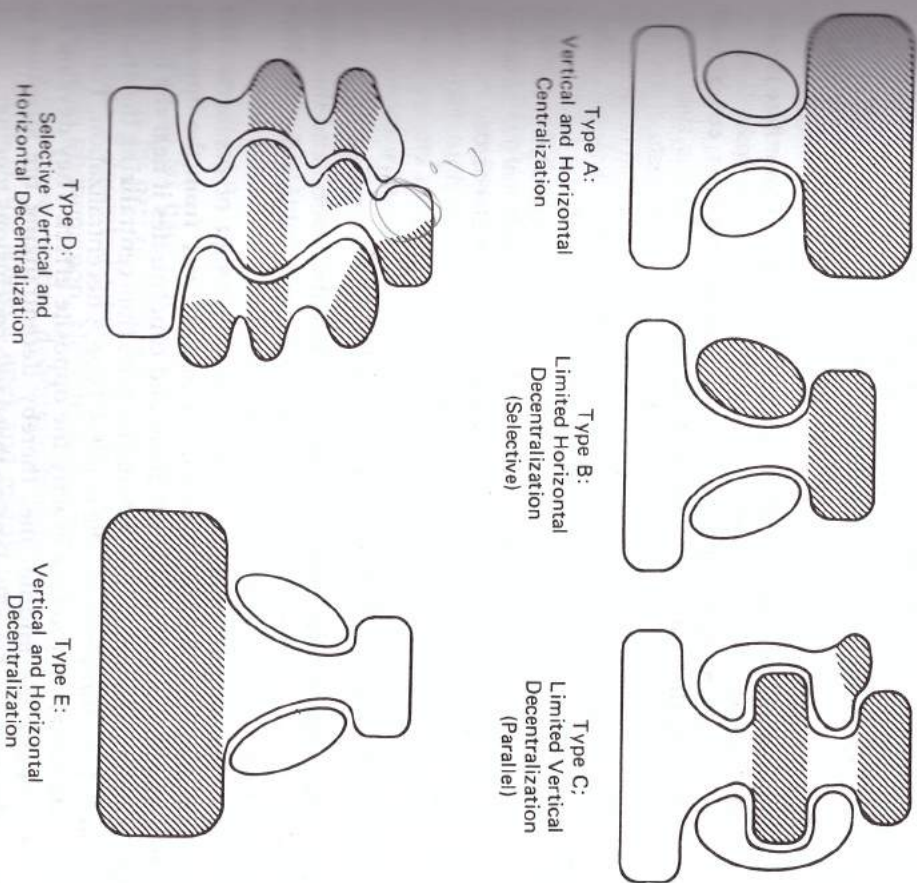
Five distinct types of vertical and horizontal decentralization seem to emerge from our discussion. These can, in fact, be placed along a single continuum, from centralization in both dimensions at one end to decentralization in both at the other. There are shown in Figure 5-4, as distortions of our logo (where, it should be noted, the inflated size of a shaded part represents its special decision-making power, not its size in membership). Each of the five types of decentralization is discussed briefly below.

Type A: Vertical and Horizontal Centralization Decisional power here is concentrated in the hands of a single individual, the manager at the top of the line hierarchy—namely, the chief executive officer. Power bulges in Figure 5-4(a) at the strategic apex. The chief executive retains both formal and informal power, making all the important decisions himself and coordinating their execution by direct supervision. As such, he has little need to share his power with staffers, middle-line managers, or operators.

Type B: Limited Horizontal Decentralization (Selective) In this type we find the bureaucratic organization with unskilled tasks that relies on standardization of work processes for coordination. (Here is where the experiments in democratization have been concentrated.) The analysts play a leading role in this organization by formalizing the behavior of the other members, notably the operators, who consequently emerge as rather powerless. Standardization diminishes the importance of direct supervision as a coordinating mechanism, thereby reducing the power of the middle-line managers as well, particularly at the lower levels. As a result, the structure is centralized in the vertical dimension; formal power is concentrated in the upper reaches of the line hierarchy, notably at the strategic apex. (Should attempts be made to shift it to the operating core as part of a program of democratization, it immediately reverts to the strategic apex by virtue of election procedures.) Because of their role in formalizing behavior, the analysts are, however, able to gain some informal power, which means limited horizontal decentralization. Because the analysts are few relative to the other nonmanagers and their actions serve to reduce the power of the other nonmanagers, notably the operators, the horizontal decentralization turns out to be of the most limited kind. It is selective, in any event, since the analysts are involved only in the decisions concerning work formalization. Figure 5-4(b) shows power bulging at the strategic apex and slightly in the technostucture.

Type C: Limited Vertical Decentralization (Parallel) Here we find the organization that is divided into market units, or divisions, to whose managers are

delegated (in parallel) a good deal of formal power to make the decisions concerning their markets. But because that power need be delegated no farther down the chain of authority, the vertical decentralization is limited in nature. Likewise, because the division managers need not necessarily share their power with staff personnel or operators, the organization can be described as centralized in the horizontal dimension. Of course, the strategic apex retains ultimate formal power over the divisions. And because it coordinates their behavior by the standardization of outputs, effected by performance control systems designed in the technostucture, a few high-level planners retain some power as well. Thus, Figure 5-4(c) shows the major bulge



The inflated size of the shaded parts indicates their special power in decision making, not their size in membership.

Figure 5-4. Five types of decentralization

well up in the middle line and minor ones in the strategic apex and at the top of the technostructure.

Type D: Selective Vertical and Horizontal Decentralization Here we see our findings about selective decentralization in the two dimensions coming together. In the vertical dimension, power for different types of decisions is delegated to work constellations at various levels of the hierarchy. And in the horizontal dimension, these constellations make selective use of the staff experts, according to how technical the decisions are that they must make: for some, the experts merely advise the line managers; for others, they join the managers on teams and task forces; sometimes even controlling the choices themselves. **Coordination within as well as between the constellations is effected primarily through mutual adjustment.** Power in Figure 5-4(d) bulges in various places (corresponding to Figure 5-2), notably in the support staff (especially as compared with the other four types), where a good deal of the organization's expertise lies.

Type E: Vertical and Horizontal Decentralization **Decision power here is concentrated largely in the operating core—the only bulge in Figure 5-4(e)—because its members are professionals, whose work is coordinated largely by the standardization of skills.** The organization is strongly decentralized in the vertical dimension because this power rests at the very bottom of the hierarchy. And it is strongly decentralized in the horizontal dimension, since this power rests with a large number of nonmanagers—namely, the operators. If another power center were to be identified, it would have to be shown apart, since the organization is forced to surrender a good deal of its control over decision processes to the professional schools that train its operators and the professional associations that control their standards.

Decentralization and the other design parameters

The relationship between our two forms of decentralization and the other seven design parameters has been discussed throughout this chapter; here we need merely review these findings briefly.

Decentralization is closely related to the design of positions. The formalization of behavior takes formal power away from the operators and the managers who supervise them and concentrates it near the top of the line hierarchy and in the technostructure, thus centralizing the organization in both dimensions. The result is Type A decentralization. Training and indoctrination produce exactly the opposite effect: They develop expertise below the middle line, thereby decentralizing the structure in both dimensions (Type E). Putting these two conclusions together, we can see that specialization of the unskilled type centralizes the structure in both dimensions, whereas specialization of the skilled or professional type decentralizes it in both dimensions.

We have also seen a number of relationships between decentralization and the design of the superstructure. **The use of market grouping leads to limited vertical decentralization of a parallel nature (Type C):** a good deal of power rests with the managers of the market units. No such definitive conclusion can be drawn for functional grouping. Types B and D are both typically functional structures, the first bureaucratic and rather centralized in both dimensions, the second organic—that is, reliant on mutual adjustment—and selectively decentralized in both dimensions. Similarly, Types A and E, at the two ends of our continuum, are often described as functional. Thus, we are led to the conclusion that **functional structure is possible with almost any degree of decentralization, in either dimension.**

The same conclusion can be drawn for unit size, or span of control. Too many other factors intervene. For example, large unit size may reflect extensive use of behavior formalization, in which case the structure is rather centralized in both dimensions (Type B). But it may also reflect extensive use of training and indoctrination, in which the structure is decentralized in both dimensions (Type E). It may also indicate the presence of market-based grouping, which results in limited vertical decentralization (Type C). Likewise, small unit size may indicate close supervision and centralization (of Type A), or the presence of small autonomous work teams and selective decentralization (of Type D).

As for the lateral linkages, we have seen that performance control systems are used primarily to control quasi-autonomous market units, and so are related to limited vertical decentralization (Type C). Action planning enables the strategic apex to control the important organizational decisions, although it must surrender some of its power to the staff planners, which results in Type B decentralization. In general, therefore, planning and control systems emerge as design parameters to effect modest or extensive centralization. And finally, the liaison devices are used primarily to coordinate the work within and between the selectively decentralized work constellations (Type D).

Decentralization by part of the organization

We have so far had little difficulty discussing each of the other design parameters by part of the organization. The same will not be true for the two kinds of decentralization, since the distribution of power is an organizationwide phenomenon. Nevertheless, some conclusions can be drawn.

By definition, vertical decentralization involves only the chain of authority—that is, the strategic apex and middle line. And here all kinds of patterns are possible. In some organizations, power remains at the strategic apex; in others, it is delegated to various levels in the middle line, sometimes selectively, sometimes in parallel, and in still other cases, power

passes right to the bottom of the middle line, and perhaps beyond, to the operating core. If one generalization is in order, it is that classic authority patterns continue to dominate organizational power systems. That is, formal power resides in the first instance with the chief executive at the top of the hierarchy. From there it is delegated at his will. And formal power, *vis-à-vis* the informal, still matters a great deal in organizations. Thus, structures may tend to be more centralized in the vertical as well as the horizontal dimension than their situations call for. In other words, **there may be a tendency to retain somewhat more power than is necessary in the line structure, especially at the strategic apex.**

Horizontal decentralization, by definition, brings the other three parts of the organization—the technostructure, support staff, and operating core—into the power system. Again, we have seen all kinds of power distributions, from negligible staff groups to powerful ones, from weak operating cores to dominant ones. But one point is clear. All have informal power to the extent that they contain expertise. Staff groups do more than just advise when they have the knowledge needed to make technical decisions; operators accumulate power when they have the expertise needed to execute managerial decisions and when they are professionals—that is, when they perform jobs based on complex knowledge and skills. As a final point, we might note that *within* the technocratic units and the higher-level support units, where the work is essentially professional, we would expect to find a good deal of decentralization, from the staff managers to the staff specialists themselves.

We have now discussed our design parameters in some detail. We have seen the various forms each can take in the structure as well as the relation of each to the coordinating mechanisms. Direct supervision is effected through the design of the superstructure, notably the grouping into units, which creates the hierarchy of managerial positions. It is also strongly influenced by the design of the decision-making system—that is, by horizontal and vertical decentralization. Standardization of work processes is achieved through the formalization of behavior, standardization of skills through the establishment of training and indoctrination programs, and standardization of outputs through the use of planning and control systems. Finally, mutual adjustment is encouraged by the use of the liaison devices.

We have also begun to see some fundamental interrelationships among the design parameters. Some are mutually exclusive. For example, an organization may rely on prejob training or else it may formalize behavior through the use of on-the-job rules; it seldom does a great deal of both. Other design parameters are clearly used concurrently—for example, performance control systems and market-based grouping, or the liaison de-

vices and organic structure. But more important, we have seen a good deal of indication that it is the clustering or configuring of many of these design parameters, not the interacting of any two, that seems to hold the key to understanding the structuring of organizations. But before we can discuss this clustering, we must put our design parameters into the context of the organization's situation.