To situate this selection, here is a précis of the argument as a whole. While I do not summarize each chapter separately, I indicate which chapter the discussion draws from. For the purpose of explication, I use an imaginary protean relationship to illustrate different structural forms, although the book uses only real examples. Simple generic diagrams accompany the exposition in the margin to illustrate the qualities of the structure of interest at any point.

The Argument

If society is not an organism, why do its parts—people and groups of people—tend to act in regular and predictable ways? A long line of social theorists have argued that regularity is due to a general process whereby the fluidity of social relations can crystallize into definite structures that then confront further interaction as objective social facts. In Chapter 1 I propose that this vision—and in most cases it has been little more than that—is a reasonable starting point for an investigation of social structure. But to make it analytically useful, we must focus on the different stages or moments of this dynamic in close empirical detail.

How can this wholly generic idea that interaction can crystallize and take on a life of its own lead us to uncover empirical regularities? I argue that there are certain characteristics of relationships that give them an inherent structural potential. Just as the form of a molecule determines the possible ordering of its bonds with other molecules, and hence determines the shape of a resulting crystal, so there are attributes of relationships that determine the possible form of social structures composed of many such relationships.

A relationship is simply regular interaction between two persons whereby each has a “profile” of relevant actions vis-à-vis the other. Thus in a teacher-student relationship, the student’s interactional profile may include listening to, nodding frequently, feigning interest, and making requests or asking questions. In some cases, the relationship is such that both parties have the same interactional profile. Such is the case for “friendship” as it is generally conceived. In other relationships, the parties must have different interactional profiles (the teacher-student relationship is an example). Finally, in still other relationships, the sameness or difference of the interactional profiles is an empirical question. For example, one co-worker may ask another for advice; this second may reciprocate (at some other time, perhaps) and ask the first for advice, or she may not.

These are extremely simple characteristics of relationships—whether the relationship is intrinsically symmetric (or mutual), whether it is intrinsically anti-symmetric (in that it cannot be mutual or reciprocated), or whether it may or may not be reciprocated (which I shall call asymmetric). If we denote each person as a black circle, each relationship can be denoted as a line connecting persons. To the right, we have representations of each of the different types of relationships that will be used below. At the top is a symmetric tie, below that an anti-symmetric tie, below that, an unreciprocated asymmetric one, and finally a reciprocated asymmetric tie. These characteristics regarding the symmetry, asymmetry, or anti-symmetry of the relationship strongly condition the possible structural forms that may arise when relationships are joined together.
Symmetric relationships (discussed in Chapter 2) make no distinction between the two parties in a relationship. Indeed, we may see them as instead setting up an implicit equivalence between the two. This can be the key to understanding the structural potential of such relationships. For example, let us imagine that as actors we begin with the symmetric relationship “friendship,” and based on our understanding of what friendship is, determine how we should create or change other relations. After much discussion, we conclude that true, mutual friendship means absolute sharing. Not only do we share our thoughts and our time, we share our friends. Your friends are my friends, and my friends are your friends. The logic of equivalence inherent in this relationship inexorably leads us to arrange our friendships in a structural form called a “clique”—a set of persons each of whom has a relationship with every other.

Such resulting structures might be expected to be very strong, and indeed they are; so strong, in fact, that they are ill-equipped to serve as the building blocks for larger structures. Any fusion of two cliques requires that all members establish relations, an interactional demand that is simply too high. As a result, moving beyond the extremely small scale requires that people soften the structural principles of clique formation, making them probabilistic instead of deterministic. Perhaps I am more likely to be friends with my friends’ friends than I am with just anyone, though I need not religiously embrace all their friends as a matter of principle. As a result of this weakening, the kinds of clear structural principles that can channel action into a structural form are lost.

Of course, it is also possible to relax the requirement that all relationships be totally symmetric; that is, we can allow (say) $A$ to choose $B$ as a friend without $B$ reciprocating. Such a set of choices—a “popularity tournament”—induces a vertical ordering of persons from the most often chosen to the least often chosen. In addition to the relationships between persons representing their choices, there are additional relations of inequality—whether or not we are friends, you must be “superior” to me if more people want you to be their friend than want me as a friend, or “inferior” if you are less desirable as a friend.

Compared to the utter simplicity of equivalence as seen in the clique, we now have a structural ambiguity. Since the asymmetric relationships may be reciprocated, it is not necessary that we forgo the equivalence and equality that we previously found to produce such simple structural forms, but without some structural constraints, inequality is likely to be introduced. Thus people can attempt to channel the asymmetric relationships in such a way so as to preserve equality, or they may instead formalize the inequality that arises from the popularity tournament.

The first response, that of controlling inequality, is likely to be found when the relationship involved is the transfer of some crucial object or person from one person to another (this is analyzed in Chapter 3). Then to prevent vertical
differentiation, one needs only to ensure that no person is involved in more relationships as a “giver” or “chooser” than she is as a “receiver” or “choosee.” A well-studied real example is marriage relations between lineages, which can be studied as if they were exchanges of women between unilineal lineages. Following Levi-Strauss, we may distinguish between restricted exchange and generalized exchange. In the first, if \( A \) gives to \( B \), \( A \) will receive (usually at a later time) from this same \( B \). In the second, while \( A \) gives to \( B \), \( A \) receives from some third party \( C \). \( C \) in turn receives from \( D \), and so on till someone receives from \( B \), completing the circle.

As Levi-Strauss points out, generalized exchange is in some ways a stronger structural form in that it can unite a large number of actors or groups, while restricted exchange (at least in its simplest form) tends to produce isolated pairs. But generalized exchange has its own weakness—while its purpose is to control inequality, it generates inequality, as it is reasonable for any participant with a temporary advantage to break the cycle and get without giving. In that case, what was once an egalitarian circle becomes a vertical line, fixing inequality instead of preventing it.

Such linear stratified orders actually have been postulated to be the fundamental form of social organization in a number of animal species including many higher primates. Accordingly, a number of sociologists have proposed that such orders are probably fundamental for human social organization as well. An examination of ethological studies (Chapter 4) finds that these “dominance orders” are characterized by displays of ritualized submission. When the pattern of these submissions is linear (which is actually more the exception than the rule), we may speak of an “order” in a technical sense.

There is very little evidence of such orders regularly arising in human groups, with the probable exception of small groups of children and adolescents who find themselves spending a great deal of time together (for example, in summer camp). Even similar groups of adults in intense, informal groups do not tend to form linear orders (examples investigated include gangs and communes). Though “caged” in that they cannot wholly avoid others in the group, still adults are able to resolve conflicts without the agonistic interaction in which one must signal submission to avoid escalation to physical violence. Instead, a variety of different venues exist to which one may move a dispute.

Where persons are not quite so caged as members of communes, they are able to avoid having relationships with all other persons, which introduces a degree of “horizontality” to the vertical structure. That is, there may be two people neither of whom can be determined to be “above” the other—were we graphing the structure, we would need to put them more or less side-by-side, leading to a horizontal dimension. Such horizontality has been repeatedly found in studies of influence relations (examined in Chapter 5). Beginning from the simplest contagion model of
influence, we can move towards social structure by allowing people to be influenced by some and not others. If people differ in their “authoritativeness,” and they will only accept influence from those who have greater authoritativeness than themselves, we generate a structural type that frequently appears in informal groups (for example, the structure shown on the right).

Pursuing our fictional example, we may now find ourselves producing a structural that contains inequalities, but ones that do not chafe at us so much as the linear formalization of the hierarchy of popularity. I can recognize that there are some people whom I ought, for one reason or another, to take as guides, and I will do so, but no one can force me to accept the domination of someone I dislike or think unworthy. While some have tried to assimilate the resulting structures to the familiar “trees” of organizational hierarchies, the informal influence structures actually lack the clear structural principles of trees.

Trees, in contrast, tend to facilitate collective action for two reasons. First of all, all persons are linked in a set of concentric circles of closeness, in the same way that species are considered to be closer to one another if they had a more recent common ancestor. This can make it easy to mobilize against those who are farther away (for example, by assembling all your first-cousins to support you against a third-cousin). Second, the tree structure is excellent for passing down commands from a leader.

While informal influence relations do not tend to form trees, tree-like structures may arise when people form relationships not against a backdrop of stratification of authoritativeness, but against a backdrop of serious material inequality. Returning to our fictitious example, I may find that there are two or three people I consider all more or less equally authoritative, and I am happy to be influenced by all three, perhaps appealing to someone of even greater authority when they give me contradictory statements. But imagine that what they have is not simply knowledge of some form, but land, while I myself have none. Without permission to work some owner’s land, I will starve. But a land-owner graciously gives me use of some of his land. What can I give in return? Little other than my promise to support this “patron,” especially through military support or its democratic form, voting, forsaking all others.

Such patron-client structures (explored in Chapter 6) regularly arise wherever there exist serious material inequalities without other redistributive mechanisms. Such structures—in contrast to all the others examined so far—have a remarkable facility for being aggregated or concatenated, because they do not assume that the relationship is transitive. That is, my patron’s patron is not my patron. Thus my patron can himself become the client of another patron without checking with me first. Large
structures can be quickly assembled out of these components without hosts of implied relations being established.

But this lack of transitivity has drawbacks, especially for the person at the top of the pyramid. Let us imagine that my patron’s patron’s patron’s patron has no patron himself (other than perhaps the saints), and hence considers himself sovereign over us all, and calls out his clients to support him militarily against some other super-patron from another land. His clients then call out their clients, who call out their clients, who call out their clients, one of whom is me. My patron is, however, killed, at which point my obligation ceases and I quickly pack up and go home, allowing the enemy to charge in and defeat the would-be sovereign. If relationships were inherently transitive, I would have owed support to this super-patron, and hence stayed. The resulting structure would have been far more robust. The struggle to enforce such transitivity (analyzed in Chapter 7) is the story of the development of one of the main structures of the modern nation state, namely the commandable army.

With the army largely comes (in the broadest outlines) a bureaucratic tax system. The other crucial social structure of the modern state is the party, and this also develops from patronage pyramids (as we see in Chapter 8). Influential people establish followings and they most generally do so by giving some “good thing” to their clients. When they mobilize their clients to fight others to maximize their access to whatever “good thing” they are pursuing, we call this a “faction.” The patrons then distribute portions of the acquired good thing to their clients, a practice known in the political world as “patronage.”

In some cases, however, the “good thing” is not divisible; the political system is such that politics has become a “winner take all” game. The increased benefit that comes to victory encourages factions to mobilize popular support, even at the cost of decreasing personal control over clients. It is this that we would now call a party in the modern sense. Instead of suppressing horizontal relationships between subalterns, as in the classic patronage structure, the party’s need to mobilize leads to a strengthening of such relationships. The strength of these relationships then tends to undermine the power of leaders. Parties therefore oscillate back and forth according to two contrary tendencies—a tendency towards anti-democratic centralization which results from the fact that the more disciplined and commandable party is likely to succeed in inter-party struggles, and a tendency towards democratic decentralization resulting from the intra-party struggles by which the mobilized adherents who are the party’s strength can undermine leadership.

We have thus followed the development of structures from the simplest interpersonal relationships to the distinctive forms underlying the modern nation state. We stop here (Chapter 9) and take stock. We have focused on the most rudimentary forms of social organization, those that are based on repeated interactions of a single type between specific persons. In limiting ourselves to this case, we have not considered the complications—and simplifications—that arise when actors become aware of the structural pattern and its implications for actions. When social structures attain a degree of social “objectivity,” we can consider them part of the environment of action, as opposed to simply being the sum of all our actions. Once we have an understanding of what is called for when we begin interactions of a certain type, we should speak of institutions, not structures. With institutions, we are free to re-create the same patterns of conduct across
specific situations. For example, moving from one school to another—even one with a radically different organization of relationships between students, teachers, other instructors, administrators, etc.—does not prevent one from understanding more or less what is required of a “student.” Empirical exploration of this process whereby local structure is superceded by institutional rules and shared definitions is left for the future.
The Institution of Transitivity and the Production of Command Structures

Why Hierarchy?

Structures for Command

We began by noting the admiration that early sociologists had for the vast social structures that were able to coordinate large numbers of persons in the service of what appeared to be social level functions. Some of these—for example, the ability to pursue large-scale warfare on land—were clearly related to the rise of the modern state (see Arrow 1974: 69). Our task was to determine to what extent we could shed light on where these structures came from. In chapter 5, we examined tree structures and found that they possessed a number of properties making them useful for coordinating such actions. In chapter 6, we saw that such structures tended to emerge in environments of inequality. Or, rather, we saw the emergence of structures that were nearly the same as those investigated in chapter 5. The patronage pyramid takes on much of the same structural form as the tree more commonly understood, but it lacks the transitivity that is required of a command tree.

Such command trees—or at least ones that approximate this form—are indeed used to pass down commands in organizations across a number of domains. In particular, trees are found both in management and in military structures (cf. Fukuyama and Shulsky 1997: 1), two arenas that are easily seen as meeting important social functions (making and taking stuff respectively). While it is easy to exaggerate the similarity between the two (especially given the penchant for capitalists to understand their competition in martial terms), there is indeed a common problem that the tree structure solves in both cases, and this is control (also see Simmel 1950 [1908]: 206f; Van Fleet and Yukl 1986: 18).

Control is facilitated by the structural principles of the tree: that subordinates have only one superordinate, and superordinates may have more than one subordinate. First, this ensures clarity of control by avoiding multiple subordination. Second, it allows superordinates to maximize the “span of control” (the number of persons who can be kept under control by the top). Third, it allows superordinates to increase their control by concentrating information that is sent upward (Feld 1959: 19). The importance of the tree structure for the project of control can be seen by simply imagining the likely results of an inverted
tree structure for some management hierarchy (a vision Henry [1954: 141] calls “horrifying to specialists in industrial organization”). Even if the relationships involved were unchanged, the structure would tend to devolve control to the lower ranks as opposed to concentrating it in the highest.¹

Tree structures are thus useful for those at the top of some hierarchy, but as we shall see, there is no justification for the fervent belief in their overall efficiency, a belief often used to explain their existence. Control is not the same thing as efficiency in reaching some instrumental goal. But in any case, fitness explains survival, not origin: where do these tree structures come from? Focusing on the development of military organization, I will argue that command trees can best be analytically understood as the result of a three-stage process. In the first, patronage triangles form. In the second, a pyramidal structure is formed by the concatenation of these triangles. In the third, some form of transitivity is imposed on the previously nontransitive pyramid. While this is by no means a universally valid story explaining every case, it is relatively close to the historical account for the development of many important armed forces, and more important, it may still correctly point to the structural tendencies and tensions of a command hierarchy.

Multidivision Firms

It would certainly be simpler if rather than trace the historical development of command trees, we could demonstrate their efficiency, and then propose that we tend to see such structures since other, less efficient, structures will be selected out. This argument was made most famously by Oliver Williamson for the case of firms. The archetypical large company has a social structure that has two characteristics. First, it has a treelike structure of supervision and authority. Second, it has a multidivisional structure, with the subunits having at least on paper a certain degree of independence. The question then is: Why do firms take on the particular structure that they do? We will briefly consider the second feature and then turn to the first.

Why would a firm have several semi-independent branches—why would each branch not be a firm of its own? Building on classic work by Coase, Williamson (1981a; 1981b; 1985; also see Arrow 1974: 33) has attempted to understand the nature of the firm in terms of market failure: where transaction costs are likely to be so high that a transaction beneficial to both parties will not be conducted via market exchange, there is incentive to restructure the firm so that the exchanging units are part of the same organization.² Exchanges that

¹ In the 1980s there was a fad called “matrix management” whereby people would have two or more supervisors. The near-total abandonment of this anomalous approach is consonant with the claims made here.

² Williamson (1981a: 553) defines these as the costs of moving goods or services across a technologically separable interface.
would not clear a market will successfully occur within the firm. While as Douglass North (1981: 41) has pointed out, this idea of hierarchy entering to solve problems of market failure is historically backward (since hierarchies preexisted markets), it may still be an analytically useful scheme.

This approach has, however, come for a lot of hard treatment for its circular nature: one can always find something that seems to explain why a firm is rational in some circumstance (see Davis 1986: 149). Since the conditions that lead to such market failures include bounded rationality (which is what we have by definition of being human) and opportunism (which is what economists assume by postulate), and evaluating the contribution of these two factors to any particular case rather subjective, it is hard to imagine that such an approach will give us much leverage in saying why in some cases we see markets and in other cases firms. A second criticism, more common among sociological circles, is that the claims are simply historically false. While Williamson (1985: 280) relies on Chandler’s (1977) history of the multidivision (or “M”) form, this history demonstrates that the crucial organizational issues revolved not around efficiency but around control (Fligstein 1990).

The development of the distributional infrastructure of the United States (most simply the rail and road system, but also the wholesale and retail structure) allowed for many commodities to be produced for a national market. To produce on such a scale, firms would have to increase in size. This led to an organizational dilemma: treating a large firm like a small one with upper-level managers attempting to control everything led to too much information overloading a few persons, while treating it as a looser holding company meant a loss of control (see Chandler 1966: 382f, 154). The resolution of this dilemma—that of control, not of efficiency—was the development of a diversified managerial structure.

Indeed, Freeland’s (2001) reanalysis of the development of the hierarchy in General Motors leads to drastically different conclusions. He argues that the actual management structure of GM was changed continually in response to a constant struggle between owners and top-level managers. In contrast to the ideal put forward by Chandler as the efficient solution, the key innovations by Alfred P. Sloan (who became president in 1923) involved violations of the distinction between overall strategy managed by the center and tactics devoted to divisions—instead, he worked to bring division heads into the decision-making process and “sell” them on strategic decisions. If divisions could not be convinced, Sloan would attempt compromise; if compromise failed he was often inclined to let them have their way, apparently reasoning that an enthusiastic effort at a second-rate plan was better than a sullen effort at a first-rate one. When, after Sloan’s retirement, GM did move to an M-form division between strategic and tactical planning in 1958, just as Sloan feared, this destroyed the good will of the divisions and led to a cycle of increasingly dictatorial control from the general office and increasing resistance from the divisions.
Freeland (2001: 295, 297) thus finds the M-form not to be the natural equilibrium reached when competition forces large firms to be efficient, but a form that maximizes owner control, whether or not it is efficient.

Now Williamson (1985: 288, 273, 392f, 236) did not deny the importance of control, nor even that the new form of organization required, as Fligstein (1990) emphasized, a new cultural conception of control. Further, he admits that other factors such as “the quest for monopoly gains” and “the imperatives of technology” contribute to “vertical integration,” or the unification with one’s suppliers and/or distributors into a single firm. He simply maintains—on faith, it seems—that these are secondary and that “mistaken” vertical integration will rarely be sustained and should be replaced by a more efficient form. But as Oberschall and Leifer (1986: 246) pointed out, socialized property in the Soviet Union did not get institutionalized because it was the best way to decrease transaction costs—it was institutionalized on the basis of political power. One may reply that the Soviet Union was not a market-based economy where less efficient forms can be expected to be weeded out. But if the applicability of Williamson’s argument to any case depends on factors in the economic environment (the larger economy in the case of the individual firm, the international economy in the case of the Soviet Union), then the focus on transaction costs is incomplete. Transaction costs are not determined by the simple factors that Williamson discusses, but the texture of the organizational environment.

The comparison of the multidivision firm to state socialism made by Oberschall and Leifer is particularly apt. What is so interesting about the structure of control within a multidivision firm, in which the central decisions regarding relations between subparts must be carried out in terms of costs, not profits, is that it well describes interfirm transactions in Russian-style state socialism. (As Lindblom [1977] stressed, it was interfirm transactions, rather than consumer or even labor markets that state socialism attempted to replace with authoritative direction from the center). Lenin (1932 [1917]: 84) had argued that in socialism, the whole society would be an enormous factory. While this was not quite accurate, it might not have been wrong to say that it was an enormous corporation. Similar conditions—the paradox of (on the one hand) unified ownership (which forbids pricing of transfers to be set by an antagonistic market process) and (on the other) the need for coordinated production (which militates against a mere conglomerate)—led to similar structures both in Russia and in large corporations involving the replacement of market transactions with authoritative direction. This replacement came about not because of technical problems but because of political power.

3 “The conglomerate form of organization,” wrote Williamson, “whereby the corporation consciously took on a diversified character and nurtured its various parts, evidently required a conceptual break in the mind-set of Sloan and other pre-war leaders.”

4 Interestingly, Williamson (1981a: 567) was happy to recognize the important part played by power and to admit that it can cut against “efficiency”—but only when it was the power of workers. According to his logic, unions should only appear where the “asset specificity” of workers is high,
In sum, we have a hard time understanding the reasons for the multidimensional structure of modern firms by treating it as the most efficient way of organizing units making exchanges (more efficient than them being in separate firms, that is). But really, the units within firms do not necessarily exchange anything at all. We have seen in chapter 3 the tendency of theorists to confuse transfers with exchange; along these lines, Williamson failed to see that the distinctive nature of the M-form is not in facilitating exchange, but in ordering transfers. Thus a shop might make machined stainless steel discs whether or not it is a member of a multidivision firm. But it is the multidivision firm that forces this shop to give these discs to another shop, without anything coming from that second shop in return. In other words, the firm may be seen as involving the fundamental relation of transfer, yet the structure comes from a different relation, namely authority (cf. Arrow 1974: 64). This brings us to the first characteristic of firm structure, namely the arrangement of persons in hierarchies.

The Wheel of Fortune

We have seen that the contours of firms were drawn not to maximize efficiency, but to maximize control. What about the more fundamental issue of the presence of hierarchy? Can this be explained by efficiency considerations?

In unashamed and heated dialogue with Marxists who claimed that production should be organized cooperatively, Williamson (1975: 46) had earlier argued that truly cooperative decision making among workers would require an “all channel” network (a clique in the terms used here) in which each person was connected to every other (figure 7.1, left). Since the number of “channels” grows as the square of the number of persons, Williamson was sure that “reorganizing from the all-channel to wheel network [figure 7.1, right] and assigning responsibility to specific access rules [i.e. what goes on] to whichever member occupies the position in the center avoids the need for full group discussion with little or no sacrifice in the quality of the decision.” Williamson regretfully adds that it is unlikely that all could meaning that workers tend not to be easily replaceable. But indeed unions are frequently found where one would expect more of a “spot” labor market. Williamson argues that “these outcomes are driven more by power than by efficiency considerations. Employers in these circumstances will thus be more inclined to resist unionization; successful efforts to achieve unionization will often require the assistance of the political process; and, since power rather than efficiency is at stake, the resulting governance structure will be relatively primitive.” It is far from obvious why workers can successfully pull down the power of the state to lead to outcomes that deviate from efficiency in their interests, but owners and managers cannot.

5 While M-forms frequently attempt to create internal prices to introduce a semblance of exchange, these are largely fictional since the central authority still determines the exchange rates. It is only when prices are fixed to match those of external suppliers of comparable products that one might be able to analyze the transactions in terms of exchange.
take turns being the center, since the important skills required are probably not to be had by all. Thus hierarchy (somewhat disguised by the bird’s eye view of the “wheel”) is derived from simple issues of communicative efficiency (also see Arrow 1974: 68f).

Yet as Williamson should have known, the structure on the left has been demonstrated to have certain advantages for decision making, including the speed with which complex decisions can be made (here see Shaw 1964, especially 117, 119). Centralized structures turn out to be good for some tasks, especially simple ones, but poor for others (and they seem to discourage collective learning). Any general assumptions about the inferiority of cliques to wheels are certainly false. What is the relation between structure and efficiency of decision making, then? It is surprising, but almost all of our supposed knowledge on this matter comes from highly artificial experiments; very few people have examined actual decision-making groups and determined what their structure was and how it was related to their success or failure.

While it is beyond the bounds of this work to provide results along these lines, as an example, I take what I believe to be the single best example of a decision that was an unimpeachable success and is well documented; this is the decision regarding how the United States should respond to the discovery that the Soviet Union was deploying nuclear missiles in Cuba. That the decision was a stunning success cannot be doubted; the range of possible outcomes to be avoided went from thermonuclear war to a serious decrease in the collective security of the United States to a loss of domestic power to “hawks.” While not all will agree as to the relative weights placed by the Kennedy administration on these goals, these are the backdrop for our evaluation. In an extremely tense environment, the decision made achieved all of the desired goals. How was the group that made this decision organized?

It was a deliberately nonhierarchical and nonstructured group, lacking even a chair to “facilitate” discussion (Kennedy 1969: 24; Allison and Zelikow 6 For a formalization of certain conditions in which the star network is the only equilibrium, see Goyal and Vega-Redondo (2005). For a different formalization, see Dodds, Watts, and Sabel (2003).
1999: 347). It was, in other words, the exact opposite of the structure Williamson declared to be most “efficient” for making decisions. There is not one most efficient structure; the structure that is best suited to making a single, momentous decision (given time for deliberation) is not necessarily the same as that which is best for making innumerable relatively trivial ones, nor is it necessarily the same as the one best suited for making decisions in less than a minute (Wilensky 1967: 75ff). A generic defense of hierarchy as efficient is wholly foolish.

What is known about hierarchy from the simple laboratory experiments is not that it is invariably efficient but that the person in the center enjoys his or her role very much, and the people at the spokes do not like their job at all (Leavitt 1951; Glanzer and Glaser 1961: 5, 13). In fact, it seems quite plausible that if some person had the choice of either participating in a more efficient egalitarian structure that gave him an enjoyment of 65.6 (to use a real number from a psychological study, though one with no particular meaning), or to participate in a less efficient one that gave him an enjoyment of 97 and everyone else an enjoyment of 31.2, he would “rationally” choose the latter. If he had resources to force this choice on others, it would be rational for him, though it would lead to a collective decrease in utility.

Analyzing the rise of hierarchy in the factory system in British textiles, Marglin (1974; 1975) emphasized that analysts and apologists had confused the undeniable increase in output of the factory system with its efficiency. By no stretch of the mind could it be demonstrated that intensive factory production was efficient in any standard economic sense. For this to be true, it would require that workers who had other options would find that they, too, could maximize their overall utilities by switching from nonfactory work to factory work. But we know that in most cases, when they had other options, no matter how poorly remunerated, they would decline factory labor. Indeed, the first factories were “manned” not by men with other options, but by women and pauper children—virtual slaves—whose labor was rented to others for the benefit of third parties (this point is stressed by Landes [1986: 594] in his rebuttal to Marglin). Far from being analyzable in terms of internal exchange, hierarchy arose precisely because relying on market relations was disadvantageous to elites.

In other words, hierarchies are effective, often brutally so, and effective is not the same as efficient. Hierarchies can arise where markets are efficient and some people are unhappy with their efficiency because it costs them too much;

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7 John F. Kennedy, and, when the president was not in attendance, Robert F. Kennedy, had a special role in guiding the meetings, though neither used this role to silence others’ opinions. More important, the president did not attend regularly, allowing participants to speak without trying to second-guess what he would like to hear and allowing them change their opinions or criticize others without fearing a loss of face (Kennedy 1969: 9, 11, 23).

8 In particular, Cerulo (2006: 193, 218–21, 225, 230) argues that treelike control structures are more likely to have “positive asymmetries” in their decisions—that is, to assume best-case scenarios and ignore the worst—while web-type “service structures” tend toward negative asymmetry.
further, it is the effective, and not the efficient, organization that will tend to survive.9 Markets, especially labor markets, require vast institutional supports whereby elites are prevented from muscling workers into doing what they want (Fligstein 2001). The wofonomics that confuses profit with efficiency works by drawing the boundary of the system so that workers’ utilities are ignored and comes to conclusions as silly as any other partial view (e.g., the economics that considers thievery the most efficient production because the profit is so high). And this partiality is important because it is the theoretical counterpart to the structure of hierarchy. As Fukuyama and Shulsky (1997: 7) have emphasized, the hierarchical enterprise of the classic vertical organization was predicated on the assumption that individual workers could not and should not be assumed to possess internal motivation to do well, but since “it was assumed that they were motivated by relatively simple economic incentives,” they could be controlled and channeled into doing what was wanted. In other words, hierarchy is an effective logic of control when one assumes—and perhaps enforces—a division of mental and manual labor, of command and obedience, just what Williamson tried to derive.

Now Williamson’s context was a discussion of peer group organization of labor as opposed to hierarchy—he was not (explicitly, at any rate) attempting an apology for capitalism, inequality, or anything else academics in 1971 were likely to treat with suspicion. Yet because he, like most other economic theorists, assumed for heuristic purposes that we begin with equal persons competing in markets, he missed the actual reasons for hierarchical organization of labor, some of which we have seen in the last chapter. Real command structures begin with unequal persons, of whom those with more power attempt to control those with less. Only from this starting point can we derive structure.

Hierarchy and Control

It is, in other words, somewhat simple-minded to insist that hierarchy arises when it is efficient, since hierarchy is about control. But why does the project of control imply multilayered tree structures? The answer usually is that there

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9 Because rampant Panglossianism is often confused with economics, a thought experiment helps. Imagine a pure labor market which is completely efficient; some firm has exchange relations with N independent workers of some form who together add x total value to some existing capital expenditure and are compensated y; the schedule of x and y arises on the basis of the demand for this type of labor, the disutility and opportunity costs of the work, and the number of workers. Brought into a hierarchy (e.g., slavery) and compelled to work harder for less cannot be efficient (we know the efficiency price of their labor from the pure market is different), but the organization that has values x* > x and y* > y will tend to be selected for. One may assimilate this to the wide class of cases in which firms profit from externalities leading to a divergence of profit maximization from collective utility maximization. Note that this structure may be technically inefficient as well as economically inefficient: it may produce less per input energy because it externalizes the cost of producing some of its inputs. Thus an inefficient technology can replace a more efficient one if the producers are not required to replenish all inputs at their cost prices.
are two conflicting tendencies that attenuate the strength of control in a social structure.

To derive these, consider “control” an antisymmetric dyadic relationship: if $A$ controls $B$, $B$ cannot control $A$. Control involves three things: direction, surveillance, and sanction. That is, $A$ must be able to give $B$ some set of prescriptions or proscriptions regarding $B$’s action. But $A$ must also be able to tell what $B$ is actually doing. Finally, $A$ must be able to exert some control over $B$’s future such that $B$ has a proximate interest in complying with $A$’s directives.

It is reasonable to expect that the project of control requires a certain amount of time and effort. While this time and effort per person may decrease as the number of persons controlled increases (and so it is not necessarily five times as difficult for $A$ to control ten people as it is to control two), still, the relation between change in number of persons controlled and change in amount of effort required can be assumed always to be positive. If there is some minimum amount of control required by any underling, then past some point, each additional subordinate decreases the ability of $A$ to control her underlings (compare the discussion of Hechter 2000: 41). While the efficiency of control is therefore a continuous quality of (past some point) diminishing returns to each additional subordinate, we often consider $A$’s “span of control” to be the number of subordinates she can control without obviously losing control.

It might be expected that because of the costs of the span of control, people will form structures with small triangles. But if we are trying to link up $T$ total people in a command structure, the smaller the span of control, the more levels the structure will involve. And each level requires an additional transmission of a directive from the top. That is, $A$ must transmit his directive to $B$, who transmits it to $C$, etc. Each one of these links allows for the possibility of a loss of control. A good control structure, then, is one that works out a reasonable trade-off between the span of control and the number of levels. But there are three complications that prevent those interested in control from simply determining the perfect structure using some formula (Williamson [1967] proposed an elegant approach to determining such formulae).

The first is the influence of the environment. In a nutshell, some environments are less predictable than others, and the less predictable the environment, the more freedom of movement subordinates generally need (van Creveld 1985: 269). In fact, it may make sense for the “controller” to refrain from giving directives at all (since she or he may not know enough about the local conditions faced by a subordinate), but instead simply offer an incentive structure to reward successful performance (the simplest being that failure leads to being fired or executed).10 One will note that this is basically the exact contrary

10 This was the general approach of the Qing dynasty in China—because the empire was too big to manage from the center given the surveillance and communications technologies of the day, the emperor instead concentrated on ascertaining who had succeeded and who had failed and apportioning rewards and punishments accordingly (Yeung 2006).
of Williamson’s scenario: here, bounded rationality provokes moving away from hierarchy and toward markets.

The second complication comes from the need for relationships other than control. Supervisors do not only need to control and watch subordinates, they also need information. Should they try to construct a completely independent structure for gathering information, or should they attempt to weld this function onto the command structure? There are certainly efficiencies in attempting to have the same social structure do more than one thing, but the best structure for implementing decisions is generally not the best structure for making decisions. In particular, one can often trust one’s closest associates to comprehend and carry out one’s instructions but, because of this very closeness, they are likely to be poor at bringing to light information or possibilities that one has not thought of (see especially Wilensky 1967). Further, the relationships used for surveillance cannot unproblematically be used for sanction: If we ask someone to “get me a stick to beat you with,” we are likely to get a very slender branch indeed.11

The third complication comes from the genesis of structures. It is all very well on paper to derive the perfect structure. But as we have seen, large structures are generally composed of preexisting smaller elements. These elements may do exactly as expected when aggregated, or they may not. To understand the production of command structures, we would do well to consider how they are produced from such smaller units, and how they adapt to the problems of combining other functions with command in environments that may vary unpredictably. The best example of a structure of interpersonal command relationships faced with uncontrollable features of the environment is probably the command structure of armed forces. Thus we can understand the development of command hierarchies by studying the development of armies; at the same time, since command armies were a key social structure of the modern state, we can start to answer the questions with which we began.

Armed Force and Command Hierarchy

The Need for Obedience

For there is nothing in War which is of greater importance than obedience.  
—VON CLAUSEWITZ, On War

Not all collective violence is perpetrated by armies. Armies are large, long-lasting, social structures that aim to coordinate persons so as to increase their potential to harm others. In many times and places, collective violence is either

11 This point was made by Bill Cosby.
not coordinated at all, or takes place through the simple coordination of clumping. In the warfare of the Homeric times, perhaps few individuals were heroes, but all heroes were individuals—that is, fighting was conducted by persons usually fighting side by side, but as individuals (for other examples, see Parker 1996: 130; Hanson 2001: 315f). In other cases, citizens of a small city-state armed themselves for defense and tended to form tightly assembled groups—often dense squares—and relied on their preexisting social solidarity to wage a stubborn resistance to often superior forces. Classic examples are the Greek hoplites (Adcock 1967; Garlan 1995) or their analogues in twelfth- and thirteenth-century Northern Europe (McKinley 1934).

These possibilities parallel those we uncovered in chapter 2 regarding simple emphases of organization (see figure 7.2). In heroic warfare, it is the individual that organizes action, and hence there is little organization beyond the differentiation of individuals into more or less heroic. In the citizen phalanx, relationships of mutual trust produce the same sort of clique structure that we found to be the objective correlative to mutual relationships. But these relationships are dependent on preexisting relationships of co-membership in other groups. The army, in contrast, by emphasizing transitivity, requires an organization that binds triads together into a treelike form. In particular, the army, at least in its fully developed state, is distinguished by the layers of officers who do not themselves fight, analogous to managers who do not work, but command.

12 Thus the emphasis on transitivity parallels some of the organizational principles that have been associated with involution, although this is only a limited parallel.
In the previous chapter, we saw the emergence of patronage pyramid structures that had the ability to span social inequalities and bring many different persons into a single connected set of relationships. Since the relationship in question revolved around reciprocal (though distinct and not necessarily complimentary) obligations, such structures are rather workable ways of passing surplus up or down a vertical divide. But this does not mean that they necessarily are good at passing down commands. First of all, clients may have obligations to support patrons, but they generally do not have obligations to obey whatever command the patron might happen to make. But even if they did, the structure’s intransitivity makes it a poor vehicle for commands. To bring the whole pyramid into play, one must command ones clients “come out with all your clients to support me, and command your clients to bring their clients, and command your clients to command their clients to bring their clients, and command your clients to command their clients to command their clients to bring their clients,” etc.\footnote{This exaggerated scenario was often approximated to some extent in feudal practice, since a summons of the king to a lord was often to come out himself and to bring at least some of those men who owed him fealty. For example, the Norman lords had obligations of military service that included the number of men at arms they would bring. To meet this quota, they might use their own household knights or fief-holders— in other words, the pyramid of which they were the apex. The Domesday book makes clear that at least in some places in England, the king called those lords not vassals of others, those (who had no intermediate between the king and themselves) would forfeit all their lands if they did not come. But those who were vassals of some other lord would only be fined forty shillings. It was obviously assumed that their mobilization was in the hands of their own lord, pointing to some degree of assumed transitivity. But this sort of rigor and control owed much to the particularities of the Norman conquest, which left a clear set of nested obligations leading up to the king (Beeler [1966] 1995: 265f; Fourquin 1976: 122; Contamine 1998 [1980]: 53; Powicke 1996 [1962]: 214; Prestwich 1996: 58–60; Mann 1986: 422).}

There is something clearly awkward about such a scheme. A command structure cannot rely on such mediated relationships if it is to be used to coordinate actions. And such coordination is implied if social aggression is carried out through armies as opposed to citizen phalanxes or heroic warriors. The idea-typical tree structure derived above, while generally not realized to completion in actually existing armies, is far from an arbitrary construction of the theorist, for there is a powerful selective mechanism favoring those structures that implement its principles (see Weber [1978] on organizational selection; Andreski [1968: 38, 92] for the case of war).

Most forms of weaponry (especially those that involve projectiles such as arrows or bullets), and nearly all forms of defensive armaments, are more effective if coordinated, and soldiers who run off to loot are easier to defeat than those who remain alert in formation. Consequently, effective armies generally require that soldiers obey first and foremost (for cases in the Middle Ages, see Contamine 1998 [1980]: 236; Downing 1992: 60; Prestwich 1996: 137, 179f). Soldiers, however, may not particularly wish to risk life and limb
in a cause that is rarely their own (see the nice discussion of O’Connell 1995: 113f). As a result, a social structure that can effectively transmit commands and ensure their being carried out increases the probability of military success. Or as the soon-to-be Roman emperor Otho explained to his soldiers in the civil wars after Nero’s death, “It is by obeying, not by questioning the orders of commanders, that military power is kept together. And that army is the most courageous in the moment of peril, which is most orderly before the peril comes” (Tacitus, History, I: 84). While there are a number of reasons why less-efficient organizational forms can persist, in general and over the long term, there is still a strong pressure pushing armies toward a structural form that maximizes the effectiveness of command (Lang 1972: 58; cf. Hanson 2005: 139). I go on to describe that structure, emphasizing its contribution to tactical success.

Command Pyramid Structure

The U.S. Army is divided into three “teams” oriented around combat, combat support (which includes artillery and aviation), and service support (logistics and supply) (here I rely on Kaufman 1996: 35–38). Soldiers are assigned to twenty-one branches divided among these three. The principle unit is the division, which may be infantry, armored, or airborne (with a few variations on some of these types); two or more divisions are combined in a corps commanded by a lieutenant general. A division (commanded by a major general) normally consists of three brigades (each commanded by a colonel), each of which consists of up to three battalions (commanded by a lieutenant colonel). An infantry battalion normally consists of five companies, each commanded by a captain; each company generally consists of three or four platoons, each commanded by a lieutenant. Finally, a platoon consists of three or four squads, consisting of four to nine men, each commanded by a staff sergeant. The actual structure is somewhat more elaborated, as there may be fourteen ranks between a private and a general (Keegan 1988: 335).

This is a decent example of the current type of structure found in the portion of an army devoted to combat (though there are many complications, as

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14 Some inefficient organizational forms persist even in competitive environments because all competitors have them; this can be the case when the different competitors draw on the same experts or virtuosos to construct their organizations (cf. DiMaggio and Powell 1983). In the case at hand, common reliance on mercenaries can produce organizational isomorphism–convergence on a single organizational scheme (see Black 1991: 10)—whether or not this is a good form of organization. Further, armies with poor organization can still triumph as long as the country fielding the army is large enough to replace casualties with fresh troops and has the economic capacity to supply and deploy them.

15 Tactics refers to winning the battle, and strategy to winning a war. The command structure is most notable for its contribution to the former.
well as other structures that have various degrees of connection with the combat structure). This structure can be seen, as a first approximation, as a tree in which higher levels pass down commands to multiple units at a lower level so as to coordinate their action. This is only a first approximation; we shall see some of the reasons why the actual social structures of preparation for conflict and for carrying out conflict differ from this plan. What is most striking, however, is not that there are deviations from this simple ideal structure, but that the same principles for the organization of armies recur persistently throughout history. These principles are as follows: first of all, the mass of soldiers fight because they are ordered to (as opposed to being inspired to prove their valor or win booty). Second, these soldiers are organized in some sort of hierarchy that can also be seen as nested subsets (the way three squads compose a platoon, four platoons a company, etc.). Third, the army is organized into semi-independent divisions. Fourth, major units (those at relatively high levels) are headed by specialized commanders who give orders, as opposed to leading by example. Fifth, at the highest levels a general staff coordinates the whole. Sixth, this staff combines the functions of information gathering with command.

Not all armies have had all of these features. Indeed, it may be said that they appear roughly cumulative in history, in that it seems harder to have the features later in the list without the earlier ones. Actual cases consequently appear to form a Guttman scale, in that there are many examples of armies (say) with the first four features but not the last two, while there are none with the last two but not the first four. Because the presence of all is necessary for the development of a modern command structure, and there are selective pressures that make such a structure a reasonable telos for the armies, we should pay attention to all when examining the construction of command structures.

Obedience

Weber (1978: 1149f) has stressed the difference between heroic warfare and modern rationalized warfare. While there are some serious problems with using his dichotomy to understand the rationalization of war in European history, at the crudest level, the point is a reasonable one. The most fundamental division between groups of (almost always) men bent on hurting others is between those in which some have to obey and those in which obedience is not paramount. While I am treating most of the structural features as present or absent, the emphasis on obedience is the sine qua non for permanent armies, and hence will be found more or less everywhere. But it is not found everywhere to the same degree—the armed forces that we would consider the strong-

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16 I make this point in Martin (2005).
est have generally stressed this obedience more than did others, and these are
the same armies that have more of the other features of a command structure.
Thus the Roman recruit’s oath was not simply to fight courageously or die
nobly or some such, it was to obey superiors and to carry out their orders
(Dodge 1995 [1891]: 49, 82f; Delbrück 1990 [1920]: 289). While other Euro-
pean armies had also generally considered it good that soldiers obey, the Ro-
mans enforced this with punishments that were “immediate and severe.” In-
stant death was earned not only by treasonous behavior or desertion, but failure
to keep proper order in battle, leaving a post without permission, or simply
being out of the call of the trumpet.

HIERARCHICAL ORGANIZATION

The second major feature is the presence of some sort of hierarchical organiza-
tion of command, with those at any level commanding more persons at a lower
level. As we have seen in chapter 5, the tree structure unites two ways of
speaking about hierarchy—hierarchy as vertical organization, and hierarchy
as nested sets of inclusion. Beyond a certain size, armies that are based on
obedience tend to be organized around such a structural principle. To continue
with the case of Rome, the army was organized in nested levels of ten. The
earliest armies were composed of 1000 men from each of the three tribes of
Rome, each tribe’s men divided into ten centuries; cavalry was organized iden-
tically except the numbers reduced by a factor of 10 (Dodge 1995 [1891]: 36f;
Goldsworthy 2006: 193). Later, there were at least six distinct levels ranging
from the consul or praetor in charge of the army (there was generally more
than one) to the decurions (those in charge of 10 men).

As might be expected, the Roman army was rather more organized than
most premodern armies. But the basic structural principle is nearly universal
(though, as I shall emphasize below, it is not always clear how central this
structural principle was for organizing battle) (Simmel 1950 [1908]: 172f).
This “decimal organization” whereby the army is organized as a set of nested
groups of ten groups of ten organized into a hundred, ten hundreds organized
into a thousand, etc., is found in Genghis Kahn’s army, which overran most of
Europe and Asia (Fletcher 1986: 29f; Keegan 1994: 204) and the earlier Kitan
army (McNeill 1982: 58f), the ancient Indian army (Srivastava 1985: 13, 97),17
very possibly Chinese armies in the “Warring States” period (decimal organi-
ization is discussed by Wei Liao-Tzu [Sawyer 1993: 245; Sawyer 2007: 244] )

17 Ten men were under a sergeant, 10 of these units under an anusatikā, and 10 of these (1000
men) under a sahaoarika, and 10 of these (10,000 men) under an āyātika, in turn under orders of
the chief of infantry, the mūhā-balādhyakṣa.
and the Japanese army of the seventh century (Farris 1995: 50), the medieval Byzantine army (Praecepta Militaria, I.I McGeer 1995: 13, 203), the ancient Incan (de la Vega 1961 [c. 1609]: 18f), and quite possibly the medieval English army. It is not the “ten-ness” of the structure that is important for us—rather, it is the adoption of a tree form that can be used to facilitate the coordination of multiple actions.

DIVISIONS

Past a certain size, however, armies become too big to carry out any unified actions no matter how well coordinated they are. As a result, there is a tendency for large armies to break up into semi-independent divisions (see Weigley [1967: 335, 386] and Stimson and Demchak [1991: 72] on two cases of the introduction of divisions in the U.S. Army). As might be expected, the Roman system of largely independent legions provides the best example of such divisions among premodern armies (see Hanson 2001: 116), although it is possible that the ancient Assyrian army had similar subunits (see Mann 1986: 233).

In many senses the Roman structure survived the fall of the empire in that successor states used similar titles and organization schemes; indeed, actual legions might survive with little alteration in terms of their organization, uniforms, and weaponry for generations after their loss of all contact with Rome (Bachrach 1972: 41, 128). But the general devolution of the scale of armies moved away from structures with real divisional independence. It was only in the late eighteenth to early nineteenth century that European armies again organized themselves around divisions (Wilson 1999: 200; Ward 1957: 162f; Fuller 1955: 414; Parker 1996: 150; Lynn 1984: 252).

Thus far, we have seen armies that consist of multiple semi-independent divisions that take the form of hierarchies that pass down commands. These structures are not only hierarchical in the sense of being vertical, they are hierarchical in the set-theoretic sense of being nested relations of proper inclusion—in other words, no person has more than one commander at any level. Such a hierarchical structure makes true command possible, but not all hierarchies have what we should call true commanders.

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18 Ten men formed a squad (ka), five squads formed a platoon (tai), and two Platoons a company (ryo).
19 Dekarchs were placed over 10 men, pentekontarchs over 50, and hekatontarchs over 100, all part of a larger unit of 1,000 soldiers known as a taxiaarchy or chiliarchy.
20 Most medieval armies moved away from geometrically organized command structures, if only because the important part of the army had no one to command, being composed of gentlemen knights. The English army, however, had more organization: it might be divided into three or four large chunks or “battles,” each consisting of three or four ranks, and infantry were organized into units of twenties (led by a vintenar) and hundreds (led by a mounted constable) (Contamine 1998 [1980]: 229f; Prestwich 1996: 48f, 60f, 127f, 160).
This point may at first seem strange to the modern reader. But throughout most of history, armies have generally been directed by leaders as opposed to commanders (cf. Keegan 1988: 61). A leader is someone who models behavior for followers; he is first in battle, directing others by example. This is famously seen in the Homerian heroes, as Weber (1978) noted, though later Greeks also considered it right that a general should fight with his men: a Greek leader in hoplite days was little more than a hoplite on the right wing with the dubious privilege of being the first to meet the enemy (Keegan 1988: 18; Hanson 2000 [1989]: 108–10). Even larger ancient armies were generally headed by leaders as opposed to commanders. As Keegan (1988: 81, 90) remarks of Alexander the Great, once he entered the fray, he lost any ability to command, and became one soldier among many (also see Delbrück 1990 [1920]: 232; Anderson 1970: 71; Hanson 2003: 235, 2005: 242; Adcock 1967: 6; Van Creveld 1985: 41).

A commander, in contrast, should be situated apart from the front lines, somewhere where he can survey the course of the battle and make adjustments by issuing orders. While a leader is often criticized for cowardice when he does not personally appear where the need is greatest (e.g., Varro at Cannae [Dodge 1995 (1891): 379]), commanders are criticized for doing just this, and jeopardizing success of the whole for their individual glory (e.g., Ney at the battle of Waterloo, whose actually picking up a musket and fighting was understood, says van Creveld [1985: 53], as “a clear sign of mental derangement”). In either case, the death of the chief can be catastrophic for the army, but in the case of the leader, his nonappearance at the front is itself deeply demoralizing (for examples, see Beeler [1995 (1966): 20]; Bury [1955 (1900): 625]).

Two factors tend to encourage the replacement of leaders with commanders. The first is a reliance on surprise tactics. Where war revolved around quick forward and backward moves and encirclements by skilled horsemen, as in most central Asian, Turkish, and Arab armies, chiefs tended to command from the flanks or the rear, where they were more likely to see weaknesses in the enemy (Keegan 1988: 117). The second is a reliance on commoners, itself usually a result of an expansion of the size of armies. Conversely, as army sizes decline, leadership generally reemerges and the distinctiveness of the command function attenuates.

For example, with the devolution of the Roman Empire to medieval armies, there was a decrease in the development of the command structure. Indeed, only the absolute head was a true commander, since all others above the lowest

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21 This shift is seen in the West as early as the 4th century BC, where Xenophon stressed the importance of a commander ensuring his physical safety; someone had to be alive to send in the reserves (Hanson 2000 [1989]: 111; Keegan 1988: 120, cf. 331; also see Praecepta Militaria I.6, IV.17; McGeer 1995: 27, 49).
ranks were knights who were obligated by codes of honor to fight (van Creveld 1985: 49f). And though there are cases in which kings held themselves apart from the battle,22 this was not general practice (e.g., Beeler [1966] 1995: 274). More typical was the commander in chief leading the last of three major divisions (though see Contamine [1998 (1980): 236] for a caution against overstatement). With the larger early modern armies that, like the Romans, involved commoners bound by no honor code to fight of their own accord, leadership again receded and command rose to the fore of the chief’s role (van Creveld 1985: 53; Feld 1977: 75; Keegan 1988: 122f).

With the great armies of the early nineteenth century, this change was largely complete. The best example of this is the Napoleonic wars, conducted as vast, wasteful conflicts of commoners directed by commanders standing on hills, looking downward at the battlefield as if it were a large game of chess. Commanders would still frequently appear at the front, whether to gather information about conditions, take charge of operations that were in disarray, or to inspire confidence; being a commander was far from a recipe for safety (Keegan 1988: 97, 99, 103, 116, 156, 303f; for an example, see Anderson 2000: 362f). But the large, hierarchical armies that require command to coordinate them also require commanders able to give these commands, and this gave rise to a new sense of duty—an obligation to shirk engagement with the enemy, which in turn decreased the possibility of exercising leadership (van Creveld 1991: 174). Thus the Duke of Marlborough wrote home in 1758, “I must do my duty as a general, keep clear of the smoke and consequently out of shot to see what is going on in order to give proper orders” (Black 1991: 40).

GENERAL STAFF

The hierarchical tree structure of nested tenths seems quite logical, and yet there is a potential conflict of interest for most commanders. On the one hand, looking upward, they are to allow themselves to be put at the disposal of the coordinating higher officers—they are to pass down orders, interpreting them in light of the current situation. But looking downward, they are the heads of units for which they have responsibility, and these units make claims on their leaders that interfere with the impartial orientation to the whole expected by the top layers. And, there are all the foibles of human nature: the desire to justify one’s actions as opposed to giving evidence of mistakes, even if such evidence contains valuable information; the jealousy of others countermanding or questioning one’s judgment; and the temptation to appropriate one’s authorized power. For all these reasons, commanders-in-chief may move to develop

22 In contrast to usual patterns of leadership in medieval Britain, Edward III set up headquarters at Crécy, Napoleon-style, in a windmill—a high point that allowed him to survey the battle (Prestwich 1996: 159, 181f). What he could do if he did not like what he saw, however, is unclear.
what is known as a general staff—a small command structure that mirrors the overall hierarchy but does not consist of people attached to specific units.

We get the term general for such higher-ups precisely because they were general: a major-general was equivalent to a major, but instead of being attached to a particular regiment, he served only the central command structure (though see Strachan 1984: 146). This simple issue of independence from attachment to a unit was a sufficiently important breakthrough that in Britain it was quite some time before there was any effort to train future members of this staff in any serious sense, though the Prussian general staff always emphasized some education in military history (Ward 1957: 25f, 31, 35; van Creveld 1985: 110f, 114). Despite the half-hearted nature of these starts—nineteenth century general staffs were tiny in comparison to those of today's armies—as well as the widely recognized powerlessness of the central command over much of what an army actually did, the general staff turned out to be an irreversible innovation. The reason lies largely in the integration of information and command it makes possible.

Those who have some idea of what they are talking about are likely to give better commands than those who do not. Hence it is quite reasonable that information should be sent to commanders. And as a rule, this is taken for granted: the same structure that is used to pass commands down is used to pass information up. As Feld (1977: 78; cf. Davis 1963: 46 for management) says, “To state it simply: the flow of commands is from superior to subordinate, the flow of information from subordinate to superior.” But for this very reason, command structures tend to be problematic for the effective transmission of information. If information goes from subordinate to superior, lateral transmission is unlikely, for the person making the gift of information is as good as announcing his subordination. And relying on those whom one commands for information as to the extent to which they have carried out commands is rather like asking persons to write their own letters of recommendation.

As a result, there is a very good reason for the commander in chief to try to develop a specialized staff that can gather information on the state of subordinate units with some degree of independence from these units themselves (see, e.g., Weigley 1967: 322f). Once set up, this staff may be reintegrated with the command structure but retain independence from local units. Thus one has the ideal-typical command structure: from the top to the bottom, an efficient, hierarchically organized social structure that has a succession of commanders passing down directives to obedient soldiers. While not all armies move toward this polar position—as we have shall see, there are good reasons why many stop well before this point—those that do not develop a command structure are generally at a serious disadvantage compared to those that do, and hence heightened military competition can lead toward the evolution of command structures.
Evidence of Selective Pressures: The Case of the Spanish Anarchists

If this is contested, we need simply look at the remarkably unsuccessful careers of those armed forces that dispensed with control. Perhaps the best case is that of the republican armies in the Spanish Civil War, originally largely composed of anarchist (antiauthoritarian) workers’ forces.\(^\text{23}\) As might be imagined, there was a potential contradiction here: as one anarchist journal declared, “Discipline is obedience to authority; Anarchism recognizes no authority” (Bolloten 1979: 302). While other armies in revolutionary situations (for example, the Continental Army during the American War of Independence, or the French Army during the revolution) produced relatively undisciplined units with weak officers (often elected) and strong enlistees (see Martin 2005), this was taken to an extreme in the Spanish case—one telling estimate is that around 70 percent of the naval officers were killed by their subordinates (Bolloten 1979: 54).

Yet the anarchist workers valiantly enlisted and formed “columns”—a good name, since each was beholden only to its own political faction, leading to a parallel (and stubby) columnar structure as opposed to a tree. Each column was led by an elected committee with no special privileges and was broken down into smaller groups with elected delegates akin to sergeants. Instead of receiving orders, units would be cajoled, and they might take hours to democratically deliberate the wisdom of an action that would need to be carried out immediately. Irrationalities and inefficiencies were great even according to normal wartime standards for armed forces, since there was no viable central command able to bring information together and determine the most important directions for further effort. Most political parties or unions had their own independent command headquarters that proceeded without considering the overall armed position; indeed, different units considered each other competitors as much as allies. While there was a war ministry that attempted to coordinate these militias by assigning them missions, “whether these missions were carried out,” said the then president Manuel Azaña later, “depended on the mood of the men, the whims of the subordinate officers, or the directives of the political organizations. . . . [What professional officers there were] had to convince their subordinates that orders should be obeyed. . . . If the men retreated in disorder, if they disobeyed, or fulfilled an order badly, the commander could not deal harshly with them.” No real coordination could be assumed, since some group was sure to fail to do its part—and indeed, every party was pleased with the chance of blaming the others for failure (Bolloten 1979: 246f, 307; Bolloten 1991: 250–61).

\(^{23}\) The case of the decentralized armies of the Renaissance Italian city states is dealt with briefly in chapter 9.
Eventually, even these principled anarchists soon admitted the functionality of discipline, and there were attempts to gain control over, and institute strict discipline for, all the Nationalist forces, which in some important cases led to armed uprisings. By that time, however, the tiny communist party had come to dominate the loyalist forces because it had from the first organized itself in a hierarchical and disciplined fashion (Bolloten 1979: 127f, 306–9; Bolloten 1991: 262, 326–38, 422, 128, 268). The anarchists had not lacked any will to fight (and such élan is far from irrelevant to military success): it should not seem necessary that they have someone over them, able and willing to give them orders and punish them for noncompliance. And yet that is what they were missing.24

Punishment and Command

The command tree, then, is not simply a social structure for transmitting ideas—information upward and direction downward. It is a structure of control, and control requires, in the last analysis, the capacity for punishment. Generally control with some measure of consent is more effective and efficient, and good controllers frequently attempt to gain such consent (as Freeland [2001] found for GM). As a result, it is tempting for analysts to try to model even control relations in terms of freely chosen adaptations of both parties (for example, by considering hierarchy in terms of principal-agent problems; recently, see Adams [1996]; Kiser and Schneider [1994]).

But no modern army relies on material rewards alone to motivate its soldiers—instead, they institute control, up to and including the threat of death. This is not to say that rational pursuit of self-interest is never involved in the creation of command structures—indeed it often is. Armies may make use of self-interest by allowing soldiers to win booty (see, e.g., Stacey 1994: 34f; also Maenchen-Helfen 1973: 139). Far from this leading to stronger, more efficient structures, however, there are many humorous stories about troops failing to vigorously prosecute the defeat of the enemy because they were too busy lining their purses.25 Thus reliance on self-interest, while a possible tactic to ensure

24 There have been cases of democratically organized regiments that proved to be formidable fighting forces, such as some of the volunteer groups in the American Revolutionary War (see Fischer 2004: 26–30, 146). While such groups might elect their own officers and refuse corporal punishment, they did recognize the right of the continental general (Washington) to direct their actions. The initial pillarization whereby each colony fielded its own independent army—often larger than Washington’s continental forces—was recognized to be untenable and more centralization was eventually introduced.

25 For examples of the use of booty as an incentive, see Prestwich (1996: 102f, 108), Mallett and Hale (1984: 186), Peckham (1979: 118). Regarding the lack of discipline due to motives for material gain: the Hamdanid emir once escaped certain capture by pursuing Byzantines by ordering his gold and silver to be scattered along the trail, which substantially slowed the pursuers (McGeer 1995: 325).
compliance, is a weak one that tends to promote disorganization. It also promotes desertion; a rational soldier would loot when the going is good, and flee otherwise. And indeed, desertion rates have generally been extremely high, and probably higher where command structures were weaker (for example, feudal armies). While overseas campaigns saw less desertion than those closer to home, there was always the chance that soldiers would prefer to set up a new home where they were than hope to make it back to their old one. Until the development of uniforms, the side an infantryman was on was usually indicated only by a simple token like a scarf which could be changed at will depending on how the battle unfolded (Roberts 1967: 198).

In sum, real command structures are not contracts between mutually interested parties: it is weak command structures that have approximated this model. While armies are tree forms like management hierarchies, they are qualitatively different in that they routinely put followers in situations where normal contractual behavior breaks down (since one party gives up basically all rights, at least in certain conditions). The fundamental distinction between the structures of armed forces and other structures is easily seen in the distinction made between soldiers and civilians in modern armies. Many contemporary commands actually involve far more civilians than soldiers: for example, 92 percent of the 126,000 employees of the Army Material Command in the 1980s, the portion of the army in charge of designing and supplying weapons and supplies, were civilians (Demchak 1991: 64). These employees could not be shot for disobeying an instruction from a supervisor, even in wartime; similarly, a supplier determined to have failed to meet contractual obligations need fear no worse than mild public scandal and perhaps a loss of future contracts.

It is thus not surprising that to the extent that they were strong, large armies have generally emphasized command structures not simply to pass down information and coordinate motions, but to sanction disobedience. A Chinese military strategist, Wei Liao-tzu (fourth century BCE) described the secret of success in creating trained troops marching to drum beats in time: “If the drummer misses a beat, he is executed. Those that set up a clamor are executed. Those that do not obey the gongs, drums, bells and flags, but move by themselves, are executed” (McNeill 1994: 110; for other examples, see Sawyer 1993: 133, 152).27

26 Black (1991: 38) says that desertion was “a major, generally the major, source of troop loss” in early modern Europe; Parker (1996: 55–57) comments that “in certain places and at certain times, almost an entire army would vanish into thin air.” In medieval England, Prestwich (1996: 128, 141) writes, desertion “began the moment levies left their county muster points.”

27 Even in ancient Greece, where the hoplites’ status as wealthy citizens precluded the harsh preemptory discipline of most ancient armies (Garlan 1995: 67; Hanson 2001: 52), commanders could be exiled for failure to carry out an assignment (for one case, see Thucydides, IV:104–7; V, 26, 72, p. 393). Thucydides himself seems to have received this treatment, but remained a firm advocate of obedience. He (II:11, 130; VI:72, 455) has the Spartan king Archidamus remind his troops to “follow your leaders, paying the strictest attention to discipline and to security, giving
To conclude, command structures are seen in their starkest form in armies; these structures, at their most developed, organize soldiers hierarchically in semi-independent divisions headed by specialized commanders, coordinated by a general staff that gathers information and issues commands, which are ultimately enforceable on pain of death. This is indeed a recipe for a strong social structure. Yet such a fully developed structure has historically been the exception, not the rule.

Limitations to Command

The Rarity of Command

We have seen that there are clear selective pressures that point toward a rationalized command structure as the most "fit" response to environmental pressures. And yet there are many reasons why existing structures for collective violence have usually fallen considerably short of this pure type. In perhaps most societies, such violence involves the assemblage of relatively ad hoc alliance patterns, frequently based on the nested set of concentric circles of relatedness-to-ego of each of the disputants as described in chapter 5 (cf. Gould 1999). In other cases, violence is ritualized and may take the form of men from two sides pairing off into dyadic fights that occur side by side but are otherwise independent (Landé 1973: 110; for examples, see Wiessner and Tumu 1998: 292; Hart and Pilling 1966 [1960]: 84f; also see Whitehead 1990: 152). Thus there can be collective violence without any real leadership.

It is quite possible that rudimentary command structures developed first among raiders and pirates, as the classic predatorial strategy—a well-organized small group against a larger but less-organized set of victims—calls out for some sort of coordination, especially when this also involves piloting a ship. When the led are free warriors who choose a chieftain (for example, the Vikings or the warriors of early feudalism [see Ganshof 1964: 4; Clarke 1999: 42 for these cases]), the leader probably could not punish those who disobeyed and deserted, but even where leaders had this sanctioning ability, there was not necessarily a hierarchical structure of intermediaries. Given the difficulty of passing down commands in battle (more on this below), when such intermediaries were present, they might often be instructed in the overall wished-for plan, and then have de facto autonomy during battle. This may have been true.
for classic Greek warfare (Adcock 1967: 8, 92), with the exception of Sparta and perhaps Thebes (Mann 1986: 203; Hanson 2005: 138).

Given the intense, stubborn, and weighty nature of conflict between Greek city-states, one may question whether command hierarchies are really so useful as I have made them out—if so, why didn’t they quickly develop in these cases? It turns out there are a number of circumstances which inhibit the development of command structures, and that these circumstances are extremely common.

**Limits to Intelligence and Communication**

In order to give useful commands, a commander must be able to assess the current state of his own troops vis-à-vis the enemy and communicate directions to them in a speedy fashion. Both of these have been extremely difficult throughout most of history.

Since soldiers generally had short lines of sight, and many matters in their visual field demanding attention, communication of instructions often involved sound, such as trumpets, drums, or gongs (for China see the *Ssu-Mu* translated in Sawyer 1993: 140, cf. 270; for the Aztecs see Hassig 1988: 95f, 111; for Carthaginians see Dodge 1995 [1891]: 65, 71, 482). Such media have a limited ability to transmit complex information; while a trumpet might be used to coordinate a relatively complex plan like a feint and then main attack, it could only be used to indicate that all should progress to the next stage in a preordained sequence (for examples, see Prestwich 1996: 178; Anderson 1970: 80; Kagan 1987: 231; and Thucydides II: 84, 90; IV: 10).

But audio communication can be almost completely blocked simply by putting on a metal helmet (for Greek examples, see Hanson 2000 [1989]: 71; Hanson 2003: 182; Hanson 2005: 144; Thucydides VI:44; IV: 34). Medieval knights could of course raise the visor to hear better, but at the risk of a spear in the eye. Perhaps in recognition of this problem, it seems that some persons were given the task of transmitting order by shouting (Prestwich 1996: 325, 336). Since noise often made such auditory signals nearly useless after battle had been joined, the visible signal of the position and movement of the standard (a banner) was probably the most important coordinating signal, though

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28 In Sparta, there were five layers of hierarchy, the smallest consisting of a half-dozen men (Keegan 1988: 125). That this was not common practice can be seen in the fact that Thucydides (V:66; p. 390) assumed that he had to explain the Spartan system to his readers: the Spartan king, he wrote, “gives the word to the divisional commanders and it is passed on from them to the regimental commanders, from them to the company commanders, from them to the platoon commanders, and from them to the Platoons. So, too, if an order has to be passed along the line, it is done in the same way and quickly becomes effective, as nearly the whole Spartan army, except for a small part, consists of officers serving under other officers, and the responsibility for seeing that an order is carried out falls on a great many people.”
an extremely simple one. Occasionally flags or smoke would be used, though
the latter could be disrupted by the enemy simply filling the air with smoke
(for China see Sawyer 1993: 270; for the Aztecs see Hassig 1988: 95f, 111;
for the Carthaginians see Dodge 1995 [1891]: 181, 242; for disruption see
Thucydides III: 2, 205; for flag signaling see Keegan 2003: 27, 99; Palmer
2005: 132, 144, 174).29

While these are examples from ancient and medieval armies, similar limita-
tions to the communication of commands persisted well into the nineteenth
century: the speed of the transmission of orders during the Napoleonic wars
was around 5.5 miles an hour, “a speed that had hardly changed for millennia”
(van Creveld 1985: 87). The signals used were still primitive in substance—
thus Wellington ordered his main forces to attack Napoleon’s at Waterloo by
waving his hat three times in the forward direction (Keegan 1988: 101; Fuller
1955: 538). Even by the start of the First World War, when telephones were
few and even buried lines quickly broken with shelling, communication fell
back on visual signals: armies had no communicative means adequate to coor-
dinate the tasks they planned (Keegan 2000: 22, 162f; Keegan 2003: 100).

Given these limitations to communication during the middle of battle, ex-
clusive orders (command) were unlikely to be more influential than example
(leaderhip) in changing the course of battle, and when the two conflicted,
soldiers were likely to do what they saw, not what they heard (for an example,
see Prestwich 1996: 178f). Since generals were unable to do much to affect
the course of battle once it was underway (here see Mason 1974: 47), they
typically attempted to arrange their troops according to anticipations of the
likely developments of the battle; responses to foreseen events were built into
the synchronic structure of the army. This emphasis on organizing troops be-
fore battle instead of coordinating them in battle is nearly universal, though it
is seen in perhaps most elaborated forms in prescriptions for warfare in ancient
India, which codified all possible orientations and actions (Srivastava 1985:
76; cf. Garlan 1995: 65f on ancient Greek warfare).30 Given the serious limita-

29 Indeed, Palmer (2005: 5, 13, also cf. 28, 46, 53) suggests that Nelson’s success as an admiral
came largely because he could explain the outlines of his ideas to subordinate commanders and
dispense with the conventional rigid signals altogether.

30 The Roman army is in many ways the exception that proves the rule. While the Romans
faced the same problems with communicating complex commands that we have discussed above,
they made a number of innovations, such as using the standard as a traffic signal which, by posting
the current order, could pass relatively complex instructions. This emphasis on real-time coordina-
tion also required an increase in real-time sanctioning; the Romans thus instituted a special corps
of military police (lectors). As each infantryman’s name and century number was painted on his
shield, it was possible to note misbehavior during the heat of battle and punish afterward; if on
the spot discipline was required, the officers would respond to breakdowns in command with a
combination of example, entreaty, threat, and execution (van Creveld 1985: 45; Dodge 1995
[1891]: 43, 46, 66, 74, 77, 82, 665; see Delbrück 1990 [1920]: 275 for skepticism that infantrymen
would actually turn to look at the standard during battle).
tions to real-time communication, it was more sensible to attempt to forecast the evolution of battle and set up the board accordingly than to attempt to develop a full-fledged command structure for responding to contingencies.

**Limitations to Formality of Structure**

We have seen limitations in the nature of communicative technology that often prevent the emergence of a command structure. But even where a rudimentary command structure may arise, there are forces that tend to check its formal elaboration. To some extent, it is simply less likely for any sort of formal structure to emerge where there are a small number of persons involved. It may be a sociological truism that as the number of participants decreases, the influence of the particularities of individual personalities increases: the structures that would work for one group of three may not work for another group of three. As a result, there are smaller returns to formal organization in smaller groups. Certainly, one would expect fewer levels of command where there are fewer people to command, and in many cases, such size differences account for a great deal of the variance in command structures. The uncharacteristically large armies that sometimes appeared in premodern cases were frequently temporary assemblages that did not exist long enough to justify the creation of a command structure (for examples from Carolingian and medieval armies, see Reuter 1999: 28; Powicke 1996 [1962]: 3f, 8f for pre-Norman England; Prestwich 1996: 118, 127f for post-Conquest period; see also Anderson 1974: 142).

Further, even where a formal hierarchical structure developed, it was likely to arise to deal with problems of logistics (e.g., supply) or information gathering, as opposed to command. For example, the *Six Secret Teachings of T'ai Kung*, dating from China’s Warring States period but suspected to contain earlier traditions, has an ideal description of the numbers of various general officers for an army. While there is no reason to suspect that this corresponds to practice, the relative balance indicates a plausible division of attention in ancient Chinese war. Three officers are dedicated to the task of “secret signals,” namely using pennants and drums for signaling (including disinformation), and seven officers dedicated to matters of intelligence (the “ears and eyes”). These seven officers are “responsible for going about everywhere, listening to what people are saying.” Only three officers are responsible for “authority,” namely the coordination and implementation of unusual and probably novel plans (Sawyer 1993: 61). Intelligence gathering was thus clearly considered of greater significance than distributing commands.

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31 There are another two “officers of techniques” responsible for spreading slander and eight roving officers for spying on the enemy.
Finally, even where a formal command structure developed, it could rarely provide the only, or even the dominant, organizational principle guiding action. This distinction between the official structures of organizations (those that appear on paper) and the actual informal social interactions of the members is well known in the sociology of organizations but has assumed particular importance in the sociology of war, in part due to studies of small-group cohesion. Such studies found what Lang (1972: 73) calls the “cardinal rule” that the closer a unit is to the actual fighting, “the more the formal organizational control becomes diluted.” But it is not the mere existence of informality that is important, it is that the informal structure inherent in small-group cohesion is a horizontal one, not a vertical one, and indeed cuts against the sorts of distinctions inherent in the organizational plan of a command structure.32

The elaboration of a formal command structure is thus limited by the small size of many armies, by the presence of informal structures, and by the presence of other formal structures (for most large armies, like other large organizations, are amalgams of different systems with often clashing organizational principles [Lang 1972: 86]). Such limitations to formal organization do not necessarily limit the efficiency of war-making; indeed, they can substantially contribute to it. Like a canine mutt, mongrel structures are often more robust than their purebred cousins. In this case, there is an inherent tension between two goals of military action. On the one hand, the need for coordinated action, especially involving planned surprise, calls for a centralization of control. On the other hand, the need for flexibility in dealing with surprises or unanticipated conditions more generally calls for decentralization (this point was recently made by Fukuyama and Shulsky [1997: x] and is elegantly put in terms of decoupling by White [1992: 182] for the case of firms). Indeed, in some such cases, horizontal communication between low-level groups may be the only way to avoid disintegration (for examples, see Travers 2005 [1992]: 71, 78). Thus to the extent that the environment remains uncontrollably uncertain, informality has its advantages.

**Political Limitations**

Disorganization often has, then, advantages for the military itself. It even more frequently has advantages for the nonmilitary elites. Hence even where a formal structure might develop in a rational direction toward a clear command tree, political forces may oppose this development out of a justified fear of an integrated military structure free from political oversight. Political leaders might deliberately compose their army as a hodge-podge of distinct nationalities to avoid this threat. Indeed, most medieval armies had such a patchwork

32 In addition to such cohesion, pseudoformal differentiations may spring up that ignore the formal structure and create their own division of labor (see, e.g., Demchak 1991: 120f).
quality based on mixing recruits from different nations.\textsuperscript{33} Even bracketing the many problems caused by fights breaking out between these nationalities,\textsuperscript{34} the sheer multiplicity of languages was a problem for a transitive command structure.

As armies turned to more national recruitment patterns, other ways had to be found of preventing the emergence of a politically strong, unified army. Ancient Greeks usually chose leaders for specific expeditions, as opposed to allowing the same people to occupy permanent positions of command (Bury 1955 [1900]: 261); other Greeks and the Romans had consuls alternate command day by day (Andreski 1968: 93; Delbrück 1990 [1920]: 76, 336, cf. 287). Where continual command was necessary, this solution was infeasible, and political leaders might simply choose to inject political control at various points in the command structure, even though that broke the transitivity of command. For example, while fifteenth-century Venetians understood the advantages that would come were they to institute a true commander in chief, they feared giving too much power to a potential Caesar. Instead of constructing a rational command structure, they put together a confusing system of contradictory responsibilities including civilian advisors (“proveditors”) who joined companies to “make suggestions” and report intelligence, leading to recurrent tensions and disagreements (Mallett and Hale 1984: 122, 176f, 179, 267f; Downing 1992: 236f).

At least an army composed of mercenaries could be dismissed when no longer needed. A standing army of nationals, generally considered to be the great support for a political regime, could also be its undoing: without a war to keep them busy, soldiers might turn their eyes to the government as the ultimate prize. In cases in which political control was not already in military hands the specter of soldiers unified under a strong command structure was frequently terrifying. With the increasing appropriation of governing power by a bureaucratic state apparatus (instead of a nobility or oligarchy), whether or not this apparatus was under the control of a monarch, there was a renewed struggle to lessen the potential autonomy of the newly strengthened army. An example is nineteenth-century Britain: while the army was generally admitted

\textsuperscript{33} McKinley (1934: 205) says of the Middle Ages, “A French or German army looked like a ragged League of Nations.” Marino Sanuto of Venice spoke of the “Noah’s Ark” quality of the Italian armies (Mallett and Hale 1984: 317, 486; for examples, see Fuller 1955: 131; Anderson 2000: 189; Parker 1996: 60). Such armies were generally recognized to be weaker than their opponents (for examples, see Thucydides I:141; 1974: 120; Mallett and Hale 1984: 315; Beeler 1971: 75; cf. Mann 1986: 439f).

\textsuperscript{34} A simple dispute over a cask of wine between Norman regulars and Flemish mercenaries forced Stephen to abandon his invasion of Anjou (Prestwich 1996: 179; also see McGeer 1995: 236); a wrestling match between a Roman legionnaire and a Gallic ally supposedly led to the destruction of at least two cohorts during the civil wars after Nero’s death (Tacitus, History II:68).
to be fractured to the point of administrative chaos, unifying it would increase the threat of its political power and interference (Strachan 1984: 8, 246). 35

This attempt to retain as much peacetime control as possible leads to a common system whereby there are basically two parallel structures, one pertaining to supply and logistics and the other to battle command. It is hard to make a clean separation between command and support functions, and in the case of the British system, there was a charmingly pathological duplication in which the standard military command (the “commander in chief” associated with the “horse guards” of the king or queen) was in charge of most troops, but the “master general of the ordnance,” an administrative agency dating back to the fifteenth century and independently subordinate to the crown, had not only the responsibility for supplying all the troops, but set up its own hospitals, bought its own stores, and controlled its own forces. Even the ordnance department, however, had a rival, in the Commissariat of the treasury, a wholly civilian entity “neither subject to military discipline nor in any way under the commander in chief” (Ward 1957: 40f, 75; Sweetman 1984: 59ff, 78, 42).

The British situation is somewhat extreme, stemming from the unbroken heritage of much of the government from medieval times. Thus in addition to the commander in chief and the master general of the ordnance, there was the secretary of state “for” war and the secretary “at” war (originally the king’s secretary when the king served as commander in chief himself) (Brewer 1988: 44; Ward 1957: 6; Sweetman 1984: 87, 96, 106; cf. Strachan 1984: 230). 36 But other armies had similar splits; indeed, this separation is still characteristic of modern armies, including the United States, in which the actual relations between the (civilian) secretary of defense and the military (the Joint Chiefs of Staff and Departments of Army, Navy and Air Force) change in every administration and for every conflict (for examples see Craig 1956: 125; Williams 1996: 67f, 70; Mowbray 1996: 87; Fukuyama and Shulsky 1997: 55; Demchak 1991: 66).

Thus while in an ideal world, one might expect the emergence of a unified and structurally simple tree of command, political leaders have often had very good reasons for preventing this from emerging. It is often said that war is too important to be left to the generals. That may be, but most rulers have feared giving them peace even more; if an incoherent structure was the price to be paid for this, that was an acceptable price.

35 As one British officer later put it, “There’s no such thing as the British Army... That’s why there could never be a coup in this country” (Fischer 2004: 34).

36 After the Crimean war this structure was considerably reformed, though it still remained comparatively disorganized (Sweetman 1984: 37, 50f, 125, 129, 131). To some extent the structural complications came from a rational adaptation to the division in tasks confronting an army that had to be prepared for home defense against European enemies while pursuing colonial wars of a very different sort (Strachan 1984: 229–31).
Class Limitations

We have found a number of times that the internal organization of a structure can be limited if the relationships that compose it cannot be sheltered from other forms of differentiation between persons.\(^{37}\) This has been quite consequential for the evolution of command structures, for it is not simply those elites running the state who have opposed the development of a rational command structure. In many cases, military participation was monopolized by upper status men. These were likely to refuse to take orders from commoners, if they allowed commoners on the battlefield at all.\(^{38}\) In some cases, the brotherly ethic of the elite forbade multiple levels of hierarchy: As van Creveld (1985: 50) says regarding medieval armies (though with some exaggeration), “For the exercise of command to be possible there must be somebody to obey orders; medieval armies, however, were made up purely of officers.”

Participation in armed forces was limited to the elite in two important general cases. The first was where battle was conducted largely by mounted warriors. Since it was a considerable expense to purchase and maintain the warhorse (in the Middle Ages a horse cost around as much as forty to one hundred sheep), war was basically restricted to the nobility, though commoners might be forced to stand with often ludicrously inefficient weapons, like bowling pins waiting to be knocked down (see Hanson 2005: 224; Prestwich 1996: 30–37; cf. Contamine 1998 [1980]: 58, 96; Parker 1996: 70; also see Farris 1995: 15; Ikegami 1995: 97f for Japan).\(^{39}\)

The second case of upper-class monopoly involved infantry, but infantry who were heavily armored and, as invariably was the case, paid for their armor themselves (for the example of the Greek hoplites see Greenhalgh [1973: 151]; though see Hanson [1996: 294] on the possible incorporation of the landless into the Athenian army and [2005: 226] on the later importance of cavalry). Among the Greeks, there might be some hierarchy approximating a command tree, but position was still largely a function of general social status, and not

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\(^{37}\) In other words, dependence on upstream or downstream valuations (White 1992) can limit involution.

\(^{38}\) Thus Queen Elizabeth chose Lord Howard of Effingham instead of Sir Francis Drake to be commander in chief during the campaign against Spain in 1588 though Drake was the better sailor and soldier because only someone of high rank could actually get others to obey him. When Robert Knollys was given a command of 4,000 in 1370 despite his modest ancestry, the captains under him were required to given written oaths in advance that they would not sabotage the mission, which they did anyway (Fuller 1955: 16; Palmer 2005: 54; Prestwich 1996: 161, 164, 166).

\(^{39}\) This has led to the almost universal hierarchical relationship between cavalry and infantry, easily assimilated to that between patron and client (on this classic association, see Roberts 1967: 209; Hanson 2001: 136). Indeed, the word *infantry*, as Keegan (1994: 357) points out, comes from the same root as “infant.”
experience or ability to lead (Garlan 1995: 62; Keegan 1994: 249). In either case, when the upper classes monopolized warrior positions, they generally opposed any progression toward a command army, even if this would increase the effectiveness of their forces (for the case of Poland, see Downing 1992: 148).

To summarize, we have seen a number of reasons why selective pressure may not encourage the development of full-fledged command structures. If these conditions are strong (for example, reliance on mounted warriors, limited communication mechanisms, and a reasonable fear of uncontrollable political ambitions of soldiers), a structure put together on the basis of patronage relations might prove preferable for coordinating armed force. But when these conditions change, this inherent pressure toward a true command structure is likely to lead to a radical change in structural principles. I begin by discussing how patronage structures serve as skeletons for armed forces, and then how such scaffolds are transformed to produce true command structures.

From Patronage Structure to Command Structure

Patronage Pyramids and Armies

Patron-client pyramids have, throughout history, formed the skeletons on which command armies emerged. There are two fundamental layers to the patronage army, and there is a rough temporal sequence whereby armies are put together by adding the second to the first. The first layer is a core consisting

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40 Once again, Rome stands out in its approximation of a pure command army–only Rome had a stratum of low-level officers in charge of command functions (the centurions) drawn from the common soldiery (Delbrück 1990 [1920]: 429–31; van Creveld 1991: 139).

41 It is worth noting that similar relationships can produce patronage pyramids where the units are not persons, but states; this often occurs in the construction of what have been called “hegemonic” empires through conquest (Hassig 1992: 84). One king conquers others, but lacks any governance structure capable of enforcing rule on the territory that is now “his,” and hence allows the conquered king to maintain his position as long as tribute is sent and the sovereignty of the high king acknowledged (see, e.g., Critchley 1978: 83, 92). The Aztec political structure (see Hassig 1988: 28–30, 177–257; Adams 1974: 381, 383f, 386f) seems to have been such a set of cascaded triangles united as a tribute-extraction scheme. In schematic terms, the Aztec structure is delightfully treelike, descending from the top kings (tlahtoani) who ruled provinces or towns, as well as client tlahtoani (teuctlahboqueh) who were largely supported by tribute. Under these nobles were lords (teuetcin), then pipiltin (sons of the higher nobles, divided in rank according to the parents’ status), and then the cuauhpiipiltin (elevated commoners) and then the ward headmen (calpolehqueh) and then the commoners (macehualtin) and finally the slaves (tlatlacohtin). But this was not a command tree–connections to the center were generally defined simply in terms of allegiance and tribute. Other empires combined both direct governance of conquered territory and hegemony (for example, the Roman Empire in its treatment of its western and eastern domains respectively) (Anderson 1974: 64). Finally, we should note that such patronage relations between cities can be combined with patronage relations between persons, as in the relationship between Florence and other Italian cities during the renaissance (see Fabbri 2000: 231; Black 2000: 297).
of the personal retainers of the king or chief lord. These can vary from close friends and relatives (who rightly or wrongly are frequently more trusted than others) to professionals who are personally dependent on the lord. These loyal followers of the leaders are given special privileges and more or less put in the position of protecting the leader should the mass of the army default, if not also given the job of executing the defaulters. Historical examples are the “Sacred Band” that formed the core of the ancient Carthaginian army, the bodyguard of Spartan kings, the “companions” of the early Greek Macedonian kings, the celeres that were the bodyguard for the first Roman leaders; and finally, the famous Praetorian guard. The Merovingian armies were largely composed of powerful dukes who brought their own armed retainers with them, and their Carolingian successors also formed around a core of Charlemagne’s personal vassals. Even England, which progressed furthest toward a professional army, had at its center from the eleventh to the mid-fourteenth century the royal household (a band of dependents that might consist of five to eight dozen knights); indeed the core of William the Conqueror’s army consisted of his own tenants. (For references, see Beeler [1966] 1995: 11; Beeler 1971: 219; Dodge 1995 [1891]: 14, 37; Bury 1955: 55; Anderson 1970: 245; Adcock 1967: 26; Keegan 1988: 34; cf. Anderson 1974: 50; Bachrach 1972: 51f, 99; Anderson 1974: 139; Prestwich 1996: 38; Mallett 1999: 211; Housley 1999: 123; Powicke 1996 [1962]: 64; Bean 1989: 128, 139; Ikegami 1995: 93.)

Of course, few kings had personal retinues sufficient to comprise a decent army (though see Contamine 1998 [1980]: 166). But because in a patronage-based governance system, the king is really a glorified patron’s patron, he could attempt to assemble an army by calling on his vassals to call out their vassals in turn. An army was thus formed by a succession of mobilizations of vassals: the king or prince would call out his vassals; each of these similarly had a core retinue of household knights as well as a number of vassals that could be mobilized. At the higher levels, the clients being called in were vassals who generally had been given a benefice in land; the larger the benefice, the more knights one could command (an important vassal of a prince in medieval Europe might command around a dozen bannerets, each of whom would bring a dozen knights). At the lower end of the pyramids, the clients being called in were frequently tenants (Beeler 1971: 34f; van Creveld 1985: 49; for the case of England, see Prestwich 1996: 41, 44; and Bean 1989: 180, 182; on the relation between clientage and tenancy in ancient Roman armies, see Brunt 1962: 71; for the structurally identical process whereby Japanese magnates mobilized not only their own household but those farming their land, see Farris 1995: 67, 75 and cf. 163f, 180–90). Thus land ownership, which we have

In England it was frequently the case that military obligations were extended to all those of property, whether or not they held some specific benefice that had military service attached. These extensions, however, aroused resistance and were not very successful (Prestwich 1996: 77, 81).
seen frequently forming the basis of patronage relationships, would also be the basis of officer-soldier relationships.43

Simplified, the tree then looked more like a bush (see figure 7.3). At every level, a higher-level patron mobilized both his own retinue (who brought no underlings), and his vassals, who in turn had a retinue and, in some cases, vassals of their own. The dashed curve separates the inner layer of the leader’s own retinue from the outer layer of those mobilized through direct and indirect ties of clientage. Further, in contrast to the perfect command tree, in the ideal version of this structure all persons entered as combatants (hence in the above diagram, higher-level persons appear twice, once as patrons mobilizing their clients, and again as fighters (the “projection” linked to their position in the hierarchy by a dashed arrow).

Since armies were assembled by recruiting clients, the organization of armed forces was more or less a residue of patronage relations. But most large armies supplemented this mobilization of clients and clients’ clients with other troops.44 Some came from general levies of commoners, as in the ancient Mesopotamian army (Mann 1986: 101; cf. 244), or on local levies whereby communities had obligations to provide a certain number of soldiers (also see Bloch 1961 [1940]: 151f; Wilson 1999: 199; Beeler [1966] 1995: 126 for examples). While such local levies were a significant force in several medieval armies (on the Merovingian military, see Bachrach 1972: 65, 69, 71), many militias were more trouble than they were worth (see Mallett and Hale 1984:

43 Even in 18th-century Germany, Junker captains were allowed to recruit their own peasants, “releasing them for farm work for most of the year,” linking the army more closely to the relationship between landowner and his peasants (Ertman 1997: 254f).

44 In some cases, horizontal relations of alliance would be employed (for the case of Japan see Farris 1995: 150), but this only pushes the question of mobilization to a different lord.
75 on communal militias in Venice). In other cases, it was mercenaries or other “irregular” forces who supplemented the patronage pyramid (see Mallett 1999: 225; Mallett and Hale 1984: 485). As a result, even in feudal Europe, it was not necessarily the case that the bulk of any army was there because of patronage relations (though see Porter 1994: 49); but aside from the foreigners recruited by strong and suspicious kings for their own defense, it was the troops attached to the patronage pyramid that were most reliable (Beeler [1966] 1995: 317; Prestwich 1996: 67; Contamine 1998 [1980]: 100).

Weakness of Antitransitive Patronage Structures

But reliability is not the same thing as strength—patronage relationship were relatively weak conduits for giving commands. As Keen (1999a: 7) points out, it was hard for such a ruler to do anything but “present himself as the companion and generous patron of his martial, aristocratic subjects, to heed their sensibilities and maintain their privileges.” Certainly it was difficult to reduce them to underlings who would merely receive and pass on orders. Consequently, to take a wonderful phrase from Christiansen (2000: 42) (speaking of the Hundred Years War), “The chain of command was usually more like a disintegrating net.”

Thus even though the armies formed on the basis of patronage pyramids look somewhat like trees, they lack the transitivity that would allow them to be used for sending threats and punishments down, and surveillance and information up. As Scott and Kerkvliet (1977: 442) put it, “If the patron could simply issue commands, he would have no reason to cultivate a clientele in the first place” (cf. Anderson 1964: 151). When the interests of clients and apexes converged, the system could work rather well. But when these interests diverged, clients’ clients could not be compelled to obey the apex. For example, Charlemagne found his subjects refusing to serve on the grounds that as their particular lords had not summoned them, they were unable to comply

45 Of course, when it was in their own interests, local levies—especially of the larger towns with their own military organizations—could bring out strong forces. But such forces were generally limited to defense of their locality. Further, there was a constant, and often petty, struggle between rulers and locals over the precise obligations entailed; not surprisingly, armies that relied heavily on local levies tended to be selected out (see Powicke 1996 [1962]: 10f, 17f, 50, 59f, 188; Anderson 1974: 160; Beeler 1971: 224; Contamine 1998 [1980]: 49, 84ff; for the 12th-century Assize of Arms in Britain see Beeler [1966] 1995: 190ff, 314; for China, Hsu 1965: 71).

46 Similar structural tensions have arisen in the modern world between nations that have a relationship of military patronage, usually initiated by a patron nation that plans to enlist the client in fighting its own battles. But as Mott (1999) has shown, the material dependence of the client does not translate into effective control, and hence the probability of the patron’s success is low.

47 A successful example of such a decentralized military structure is found in the way most Persian empires up to and including the Ottoman generally allowed their local leaders a great deal of independence in starting and stopping wars (Murphey 1999: 2f).
When the divergence in interests became sharp, important patrons could bring their clients with them when they rebelled (for the case of Ancient China see Critchley 1978: 118; for medieval England see Bean 1989: 200; and for France see Major 1964: 640).

These weaknesses are tolerable in the relatively small, noble-based armies of high feudalism, but this loss of control can become fatal when there is an attempt to enlarge armies by mobilizing commoners. Many rulers have proposed arming the poor to vanquish an enemy—a mistake they might only have the opportunity to make once. Thucydides describes such a mobilization of commoners in response to a serious external threat: “But as soon as the [common] people found themselves properly armed, they refused any longer to obey the government” (Thucydides III: 27, 208; also see Downing 1992: 61; Garlan 1995; Keegan 1988: 34; Keegan 1994: 233; Hanson 2005: 92f; Mann 1993: 243; Contamine 1998 [1980]: 88, 156).

It is beyond the bounds of this chapter to fully discuss the historical factors impelling the mobilization of commoners. Obviously political competition can lead to such mobilization, but so can the introduction of new weaponry requiring relatively little skill, such as the crossbow and the musket (on the lack of skill required for such arms, see Hall 1997: 20, 148; Hanson 2001: 20, 224, 248, 250f; Roberts 1967: 197; Parker 1996: 17; McNeill 1982: 68; Keegan 1988: 169). These new weapons, though originally not as effective as a longbow, could more easily be used by the untrained. Since such untrained men were more likely to accept command, more likely to need it if they were not to overthrow their rulers, and much more effective with it, there would be an increased incentive for heads of pyramids to attempt to institute transitivity and hence form command structures.

From Patronage Pyramids to Command Hierarchies and Back Again

Such institution of transitivity can, in broadest outline, be seen as a crucial component of the creation of states out of feudal relationships. While theorists such as Weber (1978) have stressed the importance of the ruler gaining control over the top stratum of officials—an estate in the case of German feudalism—merely controlling one’s clients does not guarantee that one can control one’s client’s clients. One may attempt to strengthen the control that one’s clients have over their clients, but then find that this has in turn weakened one’s own control.

48 It took between 100 and 175 lbs of force to pull back a longbow, but someone who could handle one could let loose an arrow every three seconds (Prestwich 1996: 133)–probably two orders of magnitude higher than a musket at that time, which even in the hands of the best trained infantry in the early 19th century could only manage to be fired every twenty seconds at best, and a crossbow took even longer (Hall 1997: 18–20; Keegan 1988: 115). (If twenty seconds sounds quick, count to yourself and imagine someone with a sword running at you.)
Something along these lines happened to Charlemagne in 810, when he ordered that “every dominus [i.e. landowning lord/patron] [should] exercise pressure on his juniors [dependents] so that they become more and more obedient and accept the imperial orders and prescripts” (see Fourquin 1976: 40, 51f), thus trying to “utiliz[e] for the purposes of government the firmly established network of protective [feudal] relationships” (Bloch 1961 [1940]: 157–59). To do this, Charlemagne attempted to strengthen the bond of vassalage by making the lord responsible for his vassal’s behavior (and hence institute some form of indirect control), and by decreasing the ability of vassals to change lords and get a better bargain. But instead of this strengthening the king’s control over his client’s clients, the middle strata (e.g., the counts) became effective independent powers because of their command over soldiers. What Charlemagne’s system lacked, as we have seen, was transitivity.

Rulers attentive to this possibility will therefore deliberately forgo some potential armed support by weakening the power of lords over their own underlings. This happened in late-fourteenth-century England as the crown sought to rein in the magnates’ reach (e.g., no longer to allowing them to treat dependents outside their household, including public officials, as “their” men). While this itself did little to strengthen the state, it put the crown in a stronger position for other actions, such as when in the fifteenth century Henry V refused to dispense patronage to those retained by lords, forcing clients to make a choice between allying with the super-patron of the king or a second-rate patron in the nobility (Bean 1989: 202f, 210). Once the independence of noble patronage was undercut, it was easier to transform underlings into officials.

The introduction of transitivity into feudal pyramids is only one part of the story of the rise of the modern state, in part because few feudal principalities rested solely on relations of vassalage, and in part because such an abstraction does not speak to the material factors involved in state building. Further, the story is not a unidirectional one. Indeed, that is part of the point of the structural analysis: while I have emphasized the transition from pyramid to command structure, due to the particular structures that first caught the attention of sociologists, in nearly as many cases command structures have devolved into patronage pyramids, as I go on to discuss.

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49 In addition, the Carolingians attempted to bolster their control over officials by coercing these to become vassals as well (also see Beeler 1971: 12). This worked for the Tokugawa shogun in Japan because he could rely on his own landholding for economic support and required nothing of his major vassals but their dependence (Ikegami 1995: 157–60).

50 Of course, it can be even riskier for a ruler to set up a governance system with intermediates if he does not tie the underlings to him through something akin to vassalage. An example here is King Stephen of Hungary’s (ruled 1001–38) reliance on counts to govern his territory. This was a wonderful way to jump start a flourishing government, but the counts were able to block any later attempts at centralization (Ertman 1997: 270f).

51 There is, as of yet, no case of a complete devolution of a modern state into real feudalism, although the breakup of various colonial and noncolonial empires–Britain and France in the early
From Command Structures to Pyramids

If indeed modern state armies can be understood as the introduction of transitivity into feudal patronage pyramids, these feudal patronage pyramids (at least those in the Mediterranean and in Europe) can themselves be understood as a result of the loss of transitivity in Roman command structures. In the later Roman Empire, armed force was of necessity dispersed across regions; not only were most troops beyond the immediate control of Rome, but they were to find themselves beyond its remunerative capacities as well. Forced to provide for themselves (at first simply for land grants or pensions after service, later for regular wages), the soldiers looked on their generals as patrons, and these patrons in turn appropriated their offices (Brunt 1962: 76; Taylor 1968: 17–21, 47; Anderson 1974: 68; also see Mann 1986: 259, 292).

Rome—like other weak centers, which is what it had become—was torn between attempting to suppress these generals-turned-magnates in pursuit of its monopoly on the legitimate use of force, and encouraging them, since it was they who really supported the empire and its laws. The military structure of Merovingian Europe was largely a residue from the dissolution of the Roman military structure into semi-independent groups. While the Carolingian empire imposed minimal unity on some of these pieces, its demise in 987 marked the devolution of power to local lords. It is this undoing of the transitivity of empire that we call feudalism, which finally led to the independent power of the castellans—basically anyone who for whatever reason had a big house of stone to hide in (Bachrach 1972: 16, 24; Fourquin 1976: 24f, 68f, 87–94).52

At the beginning of the chapter we saw that command structures are ideally independent of preexisting relationships (in contrast, most notably, to citizen militias). But this independence only pushes off the issue of dependence: the project of control, like that of empire, is expensive and often requires subsidy. Precisely because the command tree is detached from surplus extraction (in contrast to the feudal “bush” structure), its viability is always an open question. The patronage pyramid is shockingly wasteful but it does pump surplus upward and is in a sense self-funding. In contrast, we take for granted that no modern army is responsible for paying its own way. It is thus dependent on infusions of support from other social structures, and is therefore vulnerable to changing

and Russia in the late 20th century are good examples—led to a partial feudalism in the sense of magnate rule (and not relationships of vassalage) in some of the freed areas.

52 This does not quite hold for Germany nor, of course, for England, which at this time was instituting feudalism from above. While in France, the castles were eventually taken over by the monarchy, and thus their independent power used against the middle stratum of the counts, in Germany the territorial princes and counts were able to retain control over castles, and hence this source of power weakened kings in favor of princes. Italy was quite different in that in many areas, urban regions maintained control over the countryside (Beeler 1971: 194–202, 217).
allocations of surplus. As a result, a seemingly invincible command structure can rapidly bankrupt itself and revert to a patronage pyramid.

A somewhat similar devolution of power to feudal lords is seen in the case of medieval India (here I rely on Sharma [1965]; for purposes of brevity I ignore differences between regions and kingdoms). Starting somewhere around the turn of the first millennium AD, the Maurya state began to give up its control over previously centralized taxation, economic regulation, social order, and defense functions as a result of benefices that were granted to Brahmins. A prince might make such a grant to accumulate merit, or to be rid of a bothersome chore (or to encourage certain forms of economic activity)—one cannot be sure what motivated any particular transfer. In any case, the process started by donating the rights to tax some area, but this led rulers to progressively give up other administrative and social control functions: why conduct a census if there is no one to tax? How can one enforce the laws without tax revenue? By the thirteenth century, such “religious” grants could be made to non Brahmins in exchange for their service, military or otherwise, leaving India a checkerboard of small principalities with independent governance structures of all sorts, in which the kings depended wholly on their vassals for military support.

Thus patronage pyramids can develop from the degeneration of command structures, and accordingly, those wielding command structures may attempt to thwart the development of patronage ties. In other circumstances, however, they may foster them. While this seems like a deliberate weakening of the position of the apex, a more sympathetic reconstruction often finds the attempt to introduce patronage relationships within a command structure a reasonable one—the ruler fears that without cementing the relationship between ruler and staff in personalistic terms of vassalage, he will be unable to control his underlings. This evidently explains the Carolingian monarchs’ attempt to make their officials vassals (see note 49 above; Ganshof 1964: 22, 51, 161, 163). This is a devil’s bargain, as it is likely to encourage the appropriation of offices by underlings, and hence disempowers the ruler in the long run.

An example here is found in the Ottoman Empire. The empire forbade state actors to hold their benefices (in this case, the timar, akin to a prebend) indefinitely or to pass them down to descendants and thus establish themselves as regional patrons. At the same time, it inserted particular officials such as tax collectors between peasants and the timar-holders, preventing the latter from acting as reliable patrons to the former. While there was an independent judicial hierarchy, the judges here also could not assume the role of local patrons because they too were rotated. Thus functions that might solidify a patronage triangle in other agricultural societies were divided among a number of short-term exploiters, undermining any possible power structure other than the central state (see Barkey 1994: 65, 89, 91f, 100, 103, 107, 140, 240).

Further, in times of dramatic state building or contest, strains on organizational capacity tend to lead to a devolution of central power to local leaders and hence the potential regrowth of patronage pyramids (for examples, see Farris 1995: 121f, 139, 251; Barkey 1994: 36, Yeung 2006; and Parrott 2001: 14, 277ff, 284).
In sum, the structural tensions and tendencies present in, say, a largely feudal government structure with a king able to call out a general muster of the population, are largely independent of whether we are catching a transition from feudal warlordism to a centralized state, or the other way around. The crucial issue is the degree of transitivity: how much control overlords have over their underlings’ underlings and where there are likely breaks in the continuity of command. Although we see that transitivity sometimes increases and sometimes decreases, because it offers a selective advantage in military conflict, all other things being equal, there are pushes away from patronage pyramids and toward transitive command structures. I go on to examine more closely the nature of these structural pushes.

The Introduction of Transitivity in Armed Forces

The Uses of Transitivity

It might be thought that a “chain” of command might work rather well even were it not strictly transitive: that is, a lieutenant can give an order to a sergeant, who can give the order to a private, even if the lieutenant cannot give the order directly to the private. Indeed, why have a chain at all, if intermediaries can be bypassed (which is presumably demoralizing to the bypassed intermediaries)? If a command structure successfully links self-contained units that can be trusted to carry out their assignments without constant management, we might expect that transitivity is of little importance in command structures.

But there are four limitations to this reliance on mediated relations. The first is that battle is an excellent site of what Herbert Simon called “bounded rationality”—not all happenings can be prepared for in advance, and a commander may reasonably feel that coordination must be continually asserted from a central point if different sections of the army are not to slowly diverge in their understanding of the proper (and hence coordinated) response to unforeseen changes. As a result, a number of commanders have found themselves scurrying around battlefields to transmit commands and gather information. This need for personal coordination was so strong that after being wounded at Poltava in 1709, King Charles of Sweden had to be carried from place to place on a litter (Keegan 1988: 198, 220f; Fuller 1955: 178). In sum, while it is easy for commanders’ “micromanagement” to cause more problems than it solves, it is frequently important for commanders to be able to directly deal with lower units in order to keep them in coordination given changing circumstances (see Snyder 1993: 33).

The second limitation to a reliance on mediated relationships comes when “links” are lost in battle: as we have seen, in an antitransitive patronage structure, the clients of this link may reasonably conclude that their obligation to participate has ceased along with the life of their patron. Thus after Tiberius
Sempronius Gracchus was killed in an ambush in the second Punic war, his soldiers simply left, claiming that (as freed slaves) they had been bound only to him (Dodge 1995 [1891]: 464; for another example see Parrott 2001: 294). A command structure, if it is to be resilient, must have a principle for the reestablishment of relationships in such a situation (see Janowitz 1958: 481). This principle is transitivity, and it is such transitivity that allows a commanding officer (at times) to maintain control over the somewhat disorganized forces that are to be expected in battle or retreat (see, e.g., Keegan 1988: 224; van Creveld 1985: 91). A wonderful example of the uses of transitivity comes from the disaster that overtook the 106th Division of the U.S. Army in 1944; surprised and retreating, they clogged the roads and kept reinforcements from arriving while they themselves could not leave either. Movement was only made possible by a crossing guard who stood at a key intersection and directed traffic—he was a brigadier general whom everyone had to obey (Demchak 1991: 133; see Whiting 1981: 58).

The third reason for instituting transitivity lies in the fact that command structures are invariably used to pass information upward as well as downward (though there may be other structures for information as well). Sociologists and organizational theorists have long pointed to the pathologies that come with mediated information in a hierarchy in which lower levels may be sanctioned on the basis of information they send upward (see Fukuyama and Shulsky 1997: 10, 49); as van Creveld (1985: 75) argues, there is a tendency for information to become vaguer (if not sugar-coated) as it goes upward. Even if the problems of deliberate distortion or suppression can be eliminated, the time lost in mediated transmission is frequently a severe problem for military action. Mediated communication leads orders to disappear before they reach their ultimate destination, or to be seriously misinterpreted at great cost (two famous cases of supposed disobedience in the British Army, Nolan’s insistence that sent the Light Brigade to their deaths in the Crimean war and Sackville’s non-appearance at Minden, seem due to simple confusion following ambiguous mediated orders [see Mackesy 1979: 93, 230, 102; Moyse-Bartlett 1971; also Hanson 2003: 123f for another example]).

The fourth reason is that war, like all other state functions, is not an outcome of a unitary actor, but an organization of interdependent actors with different beliefs and goals. To a surprising extent, the actual prosecution of any aspect of a military campaign generally is only partially directed at the purported enemy—to a varying degree, it is part of a incessant internecine battle within the organization. The colonel does not simply want to defeat an enemy—he wants to become a general, often at the expense of another colonel. It is difficult for an immediate superior to contain the dysfunctional consequences of a rivalry between his subordinates. Transitivity increases the control that the high-
est levels have over the otherwise centrifugal tendencies of ambitious and contentious subordinates.  

For all these reasons, higher-ups may need to be able to short-circuit the mediating levels (Julius Caesar supposedly instituted this in the Roman army; Napoleon was renowned for doing just this). At the same time, mediation is still required, especially with regard to the transmission of information upward. While a commander needs the ability to jump over intermediaries and have direct communication with lower levels, the reverse is not true for simple numerical reasons—one commander will be deluged with information if mediation is wholly removed (Janowitz 1970: 102; van Creveld 1985: 71, 75, 77; cf. Feld 1959: 17; Strachan 1984: 149f; Kennedy 1969: 94; Keegan 2003: 9).

Thus transitivity allows for superordinates to directly gather information from those at the bottom of the hierarchy. There is, of course, a cost—as Simmel (1950) and Henry (1954: 145) have noted, this transitivity can lead to the “blanketing” of subordinates with commands. Just as the hen at the bottom of the pecking orders is in such sorry shape because anyone can peck her, so the poor private is overwhelmed because anyone can give him or her a command. But all in all, the transitive system has clear advantages for the deployment of armed force against an opponent.

The Need for Structure

We have seen that governmental systems can be constructed by cascading patronage triangles into pyramids, but that the resulting structures tend to be weak militarily. They can tap wide geographical regions for taxes, but generally deliver to the apex a relatively low proportion of the total extracted—too low to support a strong war effort for long. While patronage pyramids can assemble many persons for war, they cannot coordinate them so that a large proportion of those mobilized actually engage the enemy in a helpful fashion (which is to say a maximally destructive one).

Introducing transitivity into the social relationships that underlie governance is a simple, but crucial, part of the story whereby strong states can be created. While it is only part of the story—and it is a not a simple story of a unidirectional progress from patronage pyramids to states—it may be that transitivity, especially in the armed forces, was a crucial aspect of the creation of state

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55 Often the most difficulties in terms of the institution of transitivity come at the interface between civilian leaders and the second-highest military authorities; military leaders often resist the implication that, e.g., the secretary of war can override an order from a top general. In the United States (Weigley 1967: 137f, 192f, 249) conflict over this issue began in Monroe’s administration and was not completely resolved until the 20th century. In between, the nation survived without the role of the commanding general being specified in constitutional law, sometimes with a complete lack of communication between the Department of War and the army’s high command.
Gorski (1993; 2003) has recently argued that state building was strongest in Protestant countries with a Puritan or perfectionist tradition because this supplied leaders with disciplined material for bureaucratic taxation and military structures. But as Gorski also (2003: 76) stressed, existence of disciplined personality, necessary though it may have been, could not in itself be sufficient: the commandable needed to be placed in a coherent structure for their potential to be actualized.

As a counterexample, we may consider the military orders that grew up as a by-product of the first crusade in the early twelfth century in what is now Israel, beginning with the famous “Order of the Temple,” also known as the Knights Templar. Here we see a rationalized military mentality emerging from monasteries closely paralleling the rationalized economic mentality that was later to come from similar organizations. The members of such orders, while generally laymen, were as disciplined as monks (probably a great deal more so than the average monk); they took the same vows of obedience, poverty, and chastity, and their rules were generally closely based on existing rules of other orders (Forey 1992: 1f, 188f; Edbury 1999: 95, 96).

John Keegan (1994: 295), one of the foremost authorities on the history of war, has argued that it may be that “the dissolution of the monastic orders in Protestant lands during the reformation carried into the state armies—through warrior-monks who secularized themselves to become lay soldiers—the system of hierarchy, of commanders and their subordinate units, that had made the orders the first autonomous and disciplined fighting-bodies Europe had known since the disappearance of the Roman legions.”

Indeed, the discipline and consequent effectiveness of these warriors were well known, and hence members of orders were frequently put at the front or rear of a formation when mixed with other troops. But we should not overstate their degree of organization: their internal divisions were crude and based on

56 This story clearly leaves out a great deal of the development of modern states, especially the role of nationalism as an ideology, but I find it quite interesting that Mann (1993: 230) describes the role of ideology in nation building in terms of its “transitivity” especially in contrast to “particularistic patronage” structures. Ideology could transcend such local structures through general moral imperatives, increasing general discursive literacy, and providing common reference points that could be used to relativize social practices. Hechter (2000: 37, 42f, 45) also emphasizes the development of the modern state via a two-stage process in which there is first the spontaneous development of units and their concatenation into larger assemblages that, due to limitations in the technology of surveillance and control, must rely on indirect rule. Second, there is the replacement of this indirect rule with central control.

57 To support this clearly Weberian scenario, here are the words of Guibert of Nogent: “In our time God has instituted holy wars, so that the equestrian order and erring people . . . might find a new way of meritling salvation. They are no longer obliged, as used to be the case, to leave the world and to choose the monastic life and a religious rule; they can gain God’s grace to no mean extent by pursuing their own profession, unconfined and in secular garb” (Forey 1992: 13). Here is Luther’s innovation, only centuries earlier and packing a harder punch.
normal feudal considerations of the difference between knights of noble descent and nonknights of common descent. The ability of the officials in charge of such orders to supervise their subordinates was seriously limited by their geographical dispersion. Perhaps more important, there was no coordination between different orders. While the members of such orders may have taken a vow of obedience, this did not mean that they were deployable units in a coordinated enterprise (Forey 1992: 83f, 195f, 88, 174f, 166, 208).

In sum, even after the technological innovations that gave a decided advantage to whatever army could increase its coordination, there was no reason to expect that transitivity would immediately follow. Instead, most armies were locked into a reliance on semi-independent contractors that put a relatively low upper limit on the amount of possible transitivity that could be instituted. Sir Francis Drake, during the historic battle with the Armada in 1588, was set to lead the fleet in a night chase after a vulnerable Spanish enemy, but in the middle of the action, the light in his stern, there to guide the other British ships, suddenly disappeared and the plan ground to a halt. In the morning it turned out that Drake had heard that Don Pedro de Valdez’s ship, which contained much booty, was helpless for the taking, and so he extinguished the light and turned about, so as to take the prize for himself. His companions-in-arms were disgusted by this blatant elevation of personal gain over sound military tactics—unless he was to share the treasure (Fuller 1955: 25).

What was missing in nearly all armed forces up until the modern period was a coherent tree structure of command and punishment. Such a structure could not come merely from the willingness of people to be commanded, nor could it come through blind mutation and selection. Instead, such structures generally came from aspects of military life other than command, namely the recruitment, supply, and punishment of soldiers.

**Origins of Organization**

We have seen that patronage pyramids formed the skeleton for armed forces primarily by attaching obligations to benefices of various sizes, for example.\(^58\) Thus medieval armies were frequently composed of sections that had more to do with how the fighters were recruited and not how they fought in battle. These same structures, however, could be used for other purposes once the soldiers were mustered—supplying them and paying them above all else (Contamine 1998 [1980]: 229; Prestwich 1996: 41, 62, 64f; cf. Powicke 1996 [1962]: 21).

Thus the social structure implicit in the patronage relationships could be used for both recruitment and administration; rationalization of this structure

\(^58\) Similarly, the decimal organization of ancient Indian armies may have derived from patterns of feudal control over villages (Srivastava 1985: 13, 97).
was likely to be provoked by needs of administration or logistics (the supplying and movement of troops), as opposed to command (cf. Fukuyama and Shulsky 1997: 55). While these administrative matters might only lead to a rudimentary form of structure, if a prolonged war impelled administrative reform, this could end up rationalizing the command structure (for an early modern example, see Mallett and Hale 1984: 23, 101, 103, 381; on the British see Strachan 1984: 160f). One crucial way in which structural reform could take place that could help institute transitivity was to replace as many patronage-based transactions as possible with monetary ones. This involved the splitting of a largely unitary structure into two structures—one of command and one of surplus extraction (taxation) (also see Eisenstadt 1963: 24–29). This allowed for the purification of the military structure as one of command, but also increased its dependence on this parallel structure.

The Monetarization of Obligations

The institution of transitivity in command was inseparable from the monetarization of military obligations. While a replacement of personalistic feudal obligations with monetary ones did not always produce a transitive command structure, it was a necessary first step, and in general, kings have preferred to convert feudal obligations into cash flows when feasible (see Mason 1974: 51). An elegant illustration is found in Thailand, used in the last chapter as an illustration of the pure case of governance through patronage pyramids. In the Third Reign of the Bangkok period (1824–51), the pyramidal form was strengthened through tax farming and an extension of the practice of tattooing patrons’ names on clients’ bodies, but at the same time, in-kind obligations were monetarized (converted into monetary obligations). The patrons then had less personalistic relations with their clients, functioning more as simple tax collectors. But this threatened to increase the power of middlemen over the king, and such monetarization was deeply problematic because of a lack of general state capacity—collectors either could not get taxes or refused to transmit them to the central state (see Terwiel 1984: 30f). Englehart (2001: 83f, 88, 92–96, 100) argues that the “Weberian” model of a centralized state was consciously used by the Thai ruler Chulalongkorn (reigned 1868–1910, though he only came of age in 1873) to assert central control. He did this by attempting to bureaucratize tax collection with an audit office and a professional civil service composed of administrative officials lacking any personal discretion. He thus transformed an almost pure patronage structure into a nearly pure command tree.

Turning to the European continent, roughly in the thirteenth century one sees a general move away from feudal institutions for armed service and toward monetarization, though in areas with a serious shortage of manpower, personal service might remain a more attractive option than competing with high
wages. These monetary relations still might be masked as feudal ones—in France in the early fourteenth century warriors recruited for their skill were given “fiefs” that turned out to be cash, not land. Not only might more obligations be defined in monetary terms, but those with feudal obligations could be allowed—indeed encouraged—to buy these off with money (called “scutage” in England). This aided the monarch as the money taken in lieu of service was sufficient to provide for a larger number of professional soldiers, whose skill (and loyalty) were generally more reliable than that of a vassal, especially when the king left something to be desired in the realm of popularity. While some such professionals (for example, the Renaissance condottieri) might be given land similar to a benefice, in general, part of the attraction of professionals was their dissociation from existing patronage relationships and the directness of their relationship with the central power (Beeler 1971: 42, 100; Contamine 1998 [1980]: 89f, 163, 79, 100; Downing 1992: 59; Duby 1991: 166, 169; Edbury 1999: 93; Housley 1999: 124f; Ganshof 1964: 90f; Prestwich 1996: 14f, 63, 151; Powiec 1996 [1962]: 49; Wilson 1999: 189f; Fourquin 1976: 123; Mann 1986: 423; McGeer 1995: 200f; on the earlier introduction in Britain see Beeler [1966] 1995: 186, 280f, 289).

The classic example is Prussia: Frederick William (the Great Elector) basically sold the Junkers back their feudal obligations in 1653: they gave him a grant of 530,000 talers, with which he could raise a modern army, and in return allowed them to own their estates outright—and tax their peasants without turning over a cut to him—as opposed to holding them as feudal grants of land in return for military service. While he thus did create a strong nobility more independent of his wishes, with the cash he could begin setting up a small, but nonfeudal, state and military.

Now historians who have had their fill of unidirectional changes from one thing to another—that seem posited more because if they had oc-

59 To some extent, this shift toward monetarization and contractual arrangements was driven by the need of lords to compensate new forms of nonmilitary (serjeanty) service by proto-professionals who did not need land (Waugh 1986: 817).

60 Academics will be familiar with the structurally similar process by which faculty with grants can buy off their course obligations and be replaced with dedicated lecturers. The similarity goes further, in that what seemingly is in the interest of the party able to exempt themselves from onerous service turns out to be their downfall, as they find the social structure re-created without needing them. Finally, it should be noted that monetarization only increases central control when the center is able to forbid others to hire mercenaries (McKinley 1934: 204). Even so, a reliance on mercenaries could in some cases support the power of feudal lords in cases where they retained political control, as in England and the Italian city states (here see Powiec 1996 [1962]: 166, 213, 235; Contamine 1998 [1980]: 160–63; Mallet and Hale 1984: 14, 18, 33, 65–89, 101, 187–89, 292; also Adams 2005: 7).

61 Gorski (2003: 83f, 88f) has argued against the importance of this transaction, but his critique has more to do with associated claims that this led to some sort of alliance between the nobles and the crown. The later centralization of administration by Frederick William would not have been possible if raising funds for military exploits had further entrenched the powers of the estates.
curred, they would nicely explain something else—have grown accustomed to dismiss the analytic importance of any one explanatory factor such as the “monetarization of obligations.” But while it is indeed impossible to find a unidirectional change from completely “in kind” obligations to completely monetarized ones—especially within a delimited period of a particular historian’s expertise—it does not follow that this change is not of great analytical importance.

Thus one must not to deny that many historically important cases involved amalgams of different forms of remuneration and obligation, and these are likely to be misunderstood if forced into a framework of a simple transition, especially because the language used can be ambiguous (see, e.g., Beeler [1966] 1995: 307). Similarly, in most medieval contexts (and perhaps especially in England), armies were always mixtures of different types of forces, some serving on the basis of feudal obligations, some on the basis of cash incentives, and many with a bit of both (cf. Bloch 1961 [1940]: 329; Downing 1992: 158). A different mixture occurred in Japan in the Warring States period: the warlord would hire soldiers but have his vassal command them, thus using the existing patronage structure as the scaffolding for a command structure but instituting disciplined transitivity and lessened dependence on middle rungs for mobilization (Ikegami 1995: 140ff).

Yet over the long term, there was without doubt a tendency to replace feudal obligations with blanket legal ones (e.g., conscription) or with monetary incentives. Indeed, some of the confusion over the historical replacement of feudal obligations with monetary taxes comes precisely because the “feudal” obligations that seemed to be pursued by monarchs with such vigor were only insisted on precisely because all parties expected them to be replaced on an individual basis with a payment. Such monetarization, however, while it generally strengthened the central power, did not automatically lead toward a command structure; indeed, monetarization can also facilitate farming out the actual organization and/or deployment of troops to others. In many cases, monetarization led to the introduction of intermediaries into what were previously more centralized structures (Prestwich 1996: 113; Contamine 1998 [1980]: 92, 98, 162f; Adams 1974: 130, 145; Parker 1996: 64; Hall 1997: 225). In particular, mercenaries under independent contractors are generally the core of the army in relatively rich city-states (e.g. Greece, Carthage, renaissance Italy; see Garlan 1995: 79; Dodge 1995 [1891]: 11f; Mallett 1999: 216, 222, 228; Keegan 1994: 231); in such cases, monetarization tends to foster indirect rule.

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62 For example, in 14th-century England lords generally gave their retainers regular cash payments but these were called “rents” (Bean 1989: 42).

63 The Japanese path toward transitivity was somewhat different, but the structural tensions were identical (Ikegami 1995: 255–37).
But systems based on subcontracting are rarely the first choice when it comes to an empire or large nation that attempts to dominate peripheral regions. Princes find it quite expensive to pay mercenaries year-round, but if released at the end of hostilities, they tend to ravage the countryside. If paid to leave, they still need to traverse the Prince’s land and are now without any effective control. Even during war, mercenaries are difficult to control: they are prone to leave without ceremony when they fail to receive their pay, and it is difficult to punish them for desertion (Barkey 1994: 174; Keegan 1988: 173; Mallett 1999: 223, 214; Mallett and Hale 1984: 21, 24; Prestwich 1996: 152; Powicke 1996 [1962]: 246).

A reliance on mercenaries was not, then, in the long run, as effective as a true command structure. That does not mean that there were simple, unidirectional pressures toward the evolution of a structurally purified command structure. In part, this was because even a nation that could assemble a centralized, standing army with a true command structure for one task (land war at or near home) might find other—more extensive—military tasks beyond the reach of this social structure and would revert to patronage-pyramid tactics. For example, early modern states that had moved toward a command army might use patronage pyramids to assemble navies (composed largely of privately owned ships). Similarly, just as contemporary first world nations may rely on patronage-pyramids when attempting warfare in third world battlefields (this is often known as “military assistance,” but there is a difference between military assistance to a de facto sovereign state and client warfare), so early modern armies often reverted to feudal levies when forced into sprawling colonial wars.

But the monetarization of obligations was the sine qua non of the development of a transitive command structure. Such a development then made possible the changes that a number of scholars (especially Michael Roberts [1967]; also see Parker [1996: 24]) have termed the “military revolution” of the seventeenth century. (The exemplar of this change is the Swedish king and military leader Gustavus Adolphus who forever changed armed forces from raggedy feudal ensembles to efficiently administered and disciplined troops who could

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64 Naval warfare generally involved greater barriers to communication and hence a throwback to forms of coordination requiring less control (Palmer 2005: 37); also see Hillman and Gathman (2007).

65 Thus in the Seven Years War, Britain allowed the feudal practice of granting commissions to gentlemen who raised their own battalions from their clients (Anderson 2000: 488). When officers had responsibility for raising the troops they commanded from their clientele they might then be allowed to appoint their subordinate officers, potentially undermining central control (Black 1991: 79). For other examples, see Porter (1994: 87), Goldsworthy (2006:23). This is one of the many ways in which war imperatives can lead to a decreased strength of central government (cf. Brewer 1988: 138).

66 Of course, once the idea of a revolution became of interest, historians found it in different countries (Roberts originally proposed it for Sweden) and, as Prestwich (1996: 334f) points out, during the period in which they specialized.
transitive command [Fuller 1955: 52, 60ff].) While the existence of the military revolution itself as a continentwide, demarcated period is doubtful, European armies became larger, better trained, used the bow and arrow or musket as opposed to the pike or lance, were more strategically oriented, and made greater claims on the state in terms of taxes. These new forms of battle required coordination and drill, and hence transitive command structures. Further, these command structures were better integrated with administrative structures. Although great progress towards the rationalization and bureaucratisation of command occurred in the eighteenth and early nineteenth centuries, such innovations built on firmly instituted transitivity (Prestwich 1996: 336; van Creveld 1985: 52, 38f; Roberts 1967: 197f, 205; Contamine 1998 [1980]: 165–72; Porter 1994: 90; Hall 1997: 207).

This transitive command structure eventually made its way even to those forms of colonial, naval, and imperialist war often farmed out to subcontractors. To some degree, this involved a change in the practicability of centralized control due to the easing of the technical limitations discussed above. Yet there has not been an ever-increasing approximation to a pure structure. Just as we saw above for the case of management hierarchies, so even in armed forces there is, past a certain point, a declining return to command strength.

Advantages of Disorganization

Thus far, I have emphasized the advantages of clarity of structural imperatives. Yet there are, at the same time, often advantages to structural incoherence that stem not from external conditions (e.g., communication technology) but the nature of the military task (though these may also be felt in the command hierarchies of business enterprise). Coordination of efforts (paradigmatically when different actions must converge on the same goal) points to the virtues of centralized control, while the ability to respond quickly to changes in the environment points to the virtues of delegation of control to lower levels. Armies are in the unfortunate position of constantly having to do both types of operations.
tasks simultaneously (Fukuyama and Shulsky 1997: 21), two imperatives that jointly prohibit a consistent organizational form of a simple type. We can readily imagine that transitivity can strengthen a command structure’s capacity for coordination. Interestingly, transitivity can also allow for needed disorganization. Normally mediated command relationships can be short-circuited and extra attention brought to bear on goings-on that would otherwise be far removed from central planning.

If transitivity is accompanied by overcentralization and micromanagement—the top echelons insist that they receive all information and make all decisions—there are likely to be overloads on processing capacity. But allowing subordinates to process information and translate general instructions into specific plans can leave the upper level a mere figurehead. As a result, command hierarchies often have a hybrid nature, with routine affairs being mediated by middle-level officers or managers, with special “tunnels” that allow the top levels to make direct contact with the bottom. Indeed, in the situations in which limited war aims may still have weighty political repercussions, we may see the direct commanding of minor units on the part of the absolute apex of the command structure (van Creveld 1985: 98; Fukuyama and Shulsky 1997: xiii, 30, 61; Ward 1957: 156f, 164, 167–69, 230; Fuller 1955: 494; Strachan 1984: 147; see Keegan 2000: 194 for an example).

Not only are there reasons to avoid a textbook tree structure for sending information up, but there are reasons to avoid it in terms of sending commands down, since subordinate units generally require some degree of flexibility and initiative. This leads to an attempt to make some distinction between tactical and strategic decision making—the former is generally left for the lower-level commanders who are more “in touch” with what is happening “on the ground.” For military structures, the degree of flexibility required has changed over time, increasing in the past century, so that effective modern armies often have less control over the lower layers than their less-effective opponents. This devolution of decision making in modern armies was first seen in the Prussian/German Army in the war of 1866 and in the First World War. But it became the rule as opposed to the exception in the twentieth century. With increased firepower and a reliance on gasoline-powered vehicles, war involved dispersed units with increased needs for independent decision making and hence a deemphasizing of the command hierarchy, something reflected in the U.S. “doctrine” of AirLand Battle. At the same time, in part because of an increase in the number of specialists with technical training, the command pyramid began

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69 For example, while in general an efficient commander, Wellington rarely delegated any substantial decision making to subordinates. Since the most important intelligence communications therefore went directly to him—and in raw form, as opposed to the digested and summarized briefs of today—the simple act of losing the keys to his file boxes actually halted the processing of information for a week.
to bulge in the middle: fewer “GI Joes” and more middle-level personnel (van Creveld 1985: 120, 131, 140, 145–47, 168–71; Kaufman 1996: 47, 52; Janowitz 1970: 35; Keegan 1988: 246; Martin 1981: 98, 101ff, 113; Mowbray 1996: 86; Travers 2005 [1996]: 108). There are further technological imperatives that cut against the two cardinal principles of the tree structure (the absence of horizontal communication and the uniqueness of supervision), but it is as of yet unclear whether command structures will change appreciably as a result.70

We have seen that the patronage pyramids that are regular products of anarchic situations with material inequality can be transformed into command structures through the institution of transitivity. This is by no means an inevitable transition, nor an unproblematic one. Yet it is a transition that allowed for the creation of modern command structures, seen most importantly in armies. For most of the world’s history, the various barriers to the development of a true command hierarchy for military endeavor were insurmountable, but the development of nations coincided with changed conditions making possible the institution of transitivity into structures that were originally conglomerations of patronage relationships (compare Andreski 1968: 144; Wilson 1999: 202). Thus armies may be “seen” in functional terms, as Spencer and Durkheim might have liked, as sets of persons who carry out a relationship to the whole of defense against external enemies. This is not completely wrong. But it is far more accurate to say that they generally arose from the transformation of earlier structures and allowed an extension of state power against both external and internal enemies.

The commandable army was perhaps the most important of the hierarchical structures that comprise the organized interactions of the nation state. A second is the “bureaucracy,” the combined administrative functions that until relatively recently were focused on the extraction of taxes, and the various subsidiary tasks necessary to facilitate this (for example, censuses and regulation of trade). We saw that the development of the command army required its separa-

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70 It is indeed possible that, as Janowitz (1970: 37) suggests, horizontal communication is needed to establish a secure environment for specialists in different vertical lines of authority to coordinate their efforts. Horizontal information provision has generally been anathema to officers (since it is understood that to give information is to acknowledge oneself the subordinate [Feld 1959: 18f; 1977:77f; Goetzinger and Valentine 1963])—and their superiors may also discourage it. (During World War II, Douglas MacArthur forbade his subordinates to communicate directly, leading their radio operators to spy on one another to stay informed [Palmer 2005: 270f].) Despite this, such horizontal communication is likely to be built into future weaponry. Both the Abrams tank and Bradley fighting vehicle feature an Inter-Vehicular Information System that coordinates information for commanders who can see the battlefield from the positions of all the vehicles (Kaufman 1996: 58). Similarly, increased possibilities for detailed coordination and interservice cooperation threaten to produce the situation in which one person obeys more than one superior.
tion from functions of surplus extraction and concentration—these jobs were organized in a different social structure. Although we briefly return to this structure in chapter 9, the further evolution of state bureaucracy is less central for the current project: the taxation system is basically a structure for moving money around. There are admittedly myriad interpersonal interactions involved, but these are a means to an end, not an end in themselves. In contrast, the military command structure is an attempt to mobilize persons, predominantly against external enemies, by organizing their interactions in a particular structure. In this way, it is very much like the party, which is mobilized for internal, as opposed to external, conflict or action. And the mass political party is above all else the other social structure that can be said to be distinctive to the modern state. We go on to examine the development of parties from patronage pyramids.