CHAPTER 4

A Formal Agency Model of Civil-Military Relations

In Chapter 3, I used the principal-agent framework to identify the fundamental building blocks of a new theory of civil-military relations, agency theory. In this chapter, I use basic tools of formal analysis to build a game that permits analysis of the strategic interactions central to civil-military relations. The game's multiple equilibria solutions underscore that there is not a single resolution to the civil-military problematique. On the contrary, many different outcomes are possible. Analyzing the equilibria allows us to identify the factors that determine which outcome is likely under which conditions.

Civil-military outcomes—whether civilians monitor intrusively and whether the military works or shirks—are more observable than the strategic calculations that produce those outcomes. As will be demonstrated in subsequent chapters, the model permits a "reverse engineering" of the civil-military relationship: taking an observed civil-military outcome and predicting the values of certain key variables, some of which have been slighted in previous examinations of American civil-military relations. In subsequent chapters, the model's expectations will guide the empirical exploration of important phases of American civil-military experience since World War II. I begin here by identifying the assumptions on which the model rests and then describing the civil-military interactions reflected in the game. I analyze the game for equilibria and examine the parameters that the model identifies as important in governing the civil-military relationship. I conclude by briefly discussing how this approach constitutes an advance over existing applications of the principal-agent framework.

Assumptions

My formal analysis of civil-military relations rests on several assumptions. First, I assume that the players operate according to some minimal standards of rationality, in particular as subjective, expected-utility maximizers. This does not assume away the influence of political psychologic factors, most of which can be incorporated as cost factors in each player's decision calculus. Rather it simply assumes that players are aware of costs and benefits arising from their actions, that they can rank order outcomes according to some subjective estimate of the benefits minus the costs, and that they make some reasonable (albeit imperfect) effort to adopt courses of action that they believe will (so far as possible) produce outcomes in which the benefits exceed the costs, or at least exceed the payoffs from alternative courses of action. The rationalist explanation is the logical place to begin theorizing, even if there is reason to believe that other explanations may also be relevant, for instance an ideational one based on the construction of the military and civilian identities. Without a rationalist baseline explanation it is difficult to compare alternative explanations (Goldstein and Keohane 1993, Fearon 1995).

Second, and more restrictively, I assume that the players conceive of themselves as either principals or agents. This assumption is more controversial in the civil-military context. After all, isn't civil-military relations interesting precisely because the putative agents, the military, sometimes choose to reject the superior-subordinate relationship? At first glance, this provision appears to assume away the coup problem that preoccupies much of the civil-military relations literature. As we shall see, however, the principal-agent framework does not assume agent obedience; on the contrary, it expects a certain amount of conflict and disobedience, even, perhaps, to the point of a coup. It does assume, however, that the players share a common conception of the relationship in which the civilian is supposed to be superior to the military, even if this is not in fact the case, or even if the de facto distribution of power would permit it not to be so. Such an assumption is entirely reasonable in the American case, the focus of this study, and is generalizable to other democracies. This assumption is also becoming more valid even for traditionally coup-prone military dictatorships as the consolidation of the third wave of democratization continues. Because my focus is on the United States, I bracket an important problem that emerges in a comparative context: when the military sees itself as the agent of the disembod-

ied state or society rather than of the government/regime and so does not view the government as even being in a position to delegate (and *not* to delegate) authority. While the question, Who is the military an agent of? is largely settled in the U.S. context, it remains a major issue for comparative civil-military relations, of course. The theory I develop here would have to be modified to incorporate this problem for comparative studies.

Third, as a point of departure I assume only two players, a civilian principal and a military agent. This assumption is off-putting to traditional civil-military scholars because, as we know, there are in fact multiple principals (the president, Congress, the secretary of defense, and so on) and multiple agents (four services, the quasi-autonomous Joint Staff, more or less independent combatant commands, the National Guard, and so on). The assumption is not required by the principal-agent framework; indeed, Deborah Avant's principal-agent analysis of American civil-military relations makes the divided principal the centerpiece of her theory. Following Huntington, Avant argues that systems like the United States that divide civilian control between the executive and legislative branch will inevitably have less-responsive military agents than parliamentary systems like Great Britain that provide for a unified civilian principal (Avant 1994). Even with the American divided-principal system, Avant allows for some gradation of division: when Congress and the president agree on basic foreign policy objectives the military will be more responsive than when there is prominent disagreement—hence, what seemed like military insubordination in the 1990s, Avant argues, was merely the natural military reaction to disagreements between Congress and President Clinton over peace operations (Avant 1996–97). This is an appropriate if limited deduction from the principal-agent framework, but I did not make it central to the development of my original version of the agency model because my more parsimonious formulation allowed for a richer range of insights (the role of monitoring mechanisms, the range of punishments, the strategic interaction between players, etc.) and made the model more tractable for analysis.

Even analyses (such as Avant's) that do incorporate more players make simplifying assumptions for the sake of tractability. For instance, Avant distinguishes between two civilian players (the president and the Congress) but in fact the range of relevant civilian players is virtually unlimited. The legislative branch is an amalgam of numerous actors who have important roles to play in the day-to-day management of civil-military relations: the authorizing and appropriating committees (and subcommittees); the chairs and

ranking members of the committees and subcommittees and the various majority and minority leaders on the floor; other individual members of Congress with special or episodic interest in military matters; the staffs, including divisions between committee and personal staffs. Then the executive branch can be chopped up into numerous bits: the individual members of the National Security Council; the staff of the National Security Council (who themselves cluster into regional and functional offices that often compete with each other, albeit out of the public eye); the staff in the Office of the Secretary of Defense, an amalgam of numerous offices and bureaus; the service secretaries and their staffs; and so on. And if the civilian principal is to be divided, why not incorporate the obvious divisions within the military agent: the services, the branches within the services, the complex relationship between the Joint Staff and the individual service staffs, the various regional and functional combatant commands, and so on. Every theory of civil-military relations must make some simplifications to make sense of this welter of players, and I know of no analysis (whether theoretically or historically oriented) that is not vulnerable to the charge that the actual practice of civil-military relations is more complicated than the analysis reflects. Thus, as a point of departure, the original limitation of agency theory (a single principal and a single agent) is as good a place to draw the line as any. And, moreover, it is not that far removed from Huntington's simplifying assumptions. While Huntington did analyze congressional-executive relations and discuss the role of the National Guard (and, to a lesser extent, interservice rivalry), his preferred policy of objective control assumed that the civilian branch could be made to act as a more or less unified principal vis-à-vis an equivalently unified officer corps (Huntington 1957). As will be discussed below, moreover, the agency model captures at least some of the complexity of divided principals and agents by varying expectations of punishment as a function of how united or divided the principals and agents are.

The Game: What the Players Do and Why

The game begins with the civilians deciding how to monitor the military. Traditional civil-military relations theory has treated this as a normative question—how *ought* civilians monitor—hence Huntington's embrace of the Clausewitzean distinction: civilians handle policy (politics), the military handles operations.[1] To understand how civilians *will* monitor as opposed to how they *ought* to monitor, it is necessary to have some theory of civilian

motivation. Most principal-agent treatments assume that principals are cost sensitive, and I adopt the same rationalist point of departure.[2]

Traditional treatments assume that political principals are primarily electorally motivated, and then measure cost in terms of whether the activity diverts from reelection efforts. It is not that political principals are lazy but rather that time spent doing the work that could be done by agents is time not spent out on the campaign trail. This, however, probably understates costs in the civil-military context (and, indeed, in foreign policy generally). If political principals were *only* electorally motivated—if they had no other interest in policy, neither for reasons selfish (historical legacy) nor noble (a belief in using political power for good)—they would probably not devote much time to civil-military relations at all, since its direct electoral impact is marginal.[3] That political principals *do* concern themselves, however, does not make them cost insensitive or even electorally unmotivated. Rather, it suggests using a richer understanding of costs, to include both *electoral costs* (time and effort) and what may be called *policy costs:* the disutility they attach to a divergence between their preferred policy and the actual policy outcome.

Both sets of costs affect the monitoring decision. It is bothersome to monitor an agent very closely. As anyone who has ever employed a helper knows, if the helper requires too much monitoring, one might as well do the job oneself. Of course, different arrangements make the same level of intrusive monitoring more or less costly. For instance, e-mail and voice mail can reduce the time required to monitor a research assistant closely; instead of requiring both parties to be available at the same time (if not the same place) for a status report, these technologies allow for frequent reporting at comparatively lower cost. Thus, the first set of costs may be thought of as some reflection of the intrinsic time and effort required to conduct the monitoring. In the civil-military context, these costs are directly affected by changes in communications technology. As the command and control system modernizes, previously impossible mechanisms of control—for instance, precisely moving ships in order to send a complicated diplomatic signal of resolve and restraint—become possible.

The policy costs of monitoring derive from the expertise and competence considerations discussed above. While the civilian is politically competent to make decisions and dictate how those decisions are carried out—and, moreover, under democratic theory has a right to be wrong—the different level of technical competence suggests that civilian interference may degrade the performance of the military agent. Even if the civilian is not actively direct-

ing the military into foolish behaviors, micromanagement may so interfere with the conduct of a mission as to produce similarly negative results. Concern about these costs motivated Huntington's normative prescription for civilians not to monitor intrusively, to recognize what he referred to as "autonomous military professionalism" (Huntington 1957, p. 83). He feared that excessive interference would undermine military professionalism and, consequently, the military's ability to adequately do its job of defending the state. These policy costs presumably vary with the extent to which the issue in question hinges on military expertise. Micromanaging an assault on a defended beach may have more pernicious side effects than micromanaging an auction among bidders hoping to establish fast-food franchises on military bases. In other words, for matters touching most closely on military expertise, civilians will have more confidence that the military will produce better policy and less confidence that they can do it—and the costs of intrusive monitoring should, *ceteris paribus,* be higher (Feaver 1992, Bawn 1995).

Changes in these monitoring costs are thus expected to change the outcome of the civil-military game. But it should be emphasized that changes in the monitoring costs are themselves largely exogenous to the civil-military game. For instance, monitoring costs vary with changes in technology—the gradual march to cheaper and faster communications networks. Obviously there are many factors that affect the evolution of communications technology, and while civil-military concerns may have some small role to play,[4] they are probably not central and it would be impossible to model all of them. Likewise, the policy costs of monitoring vary with the external threat, which agency theory treats as exogenous; thus the end of the Cold War might have resulted in a radically different threat condition, which could have resulted in a radically different cost of monitoring. Agency theory treats the end of the Cold War as exogenous, although it is at least possible that different configurations of civil-military relations over time contributed to the end of the Cold War. If that is so, agency theory, at least in its introductory form, cannot account for it.

Treating the changes in monitoring costs as exogenous does not mean pretending that they are irrelevant to civil-military relations. On the contrary, it means agency theory shows how changes in the costs of monitoring affect civil-military relations but does not show how changes in civil-military relations might affect the costs of monitoring. Like any other analytical approach, agency theory must identify things it is trying to explain and bracket off things it is not trying to explain.

Once the civilian has chosen his mix of monitoring and control mecha-

nisms, it is the military's turn to act. The military chooses between working *(W)* and shirking *(S)*, between doing what the civilian wants exactly and implementing the civilian's orders as the military would prefer to implement them.[5] At least two considerations go into the military's choice. First, the difference between *W* and *S*, between what the civilian is asking and what the military would like to do anyway, will affect the propensity to shirk; other things equal, the smaller the difference, the less incentive the military has to shirk—in the extreme, if the civilian asks the military to do something it already wants to do, then the concept of shirking does not really apply. The difference between *W* and *S* is exogenous, a function of other factors outside the agency model, such as the nature of the external threat; again, "outside the model" does not mean irrelevant to civil-military relations but rather "something that is best thought of as affecting civil-military relations rather than being affected by civil-military relations." The second consideration is endogenous to the game: specifically, how the civilian principal responds to shirking.

After the military has moved, nature has a move: will the shirking be caught or not? Not all shirking will be detected; indeed, this is the essence of the agency problem. The probability of being caught is a function of the monitoring system; the more intrusive the civilian monitors, the greater the likelihood that military shirking will be detected. If shirking *is* detected, the civilian has a move: whether or not to punish *(p)* the military agent. As noted in the previous chapter, punishment is not a foregone conclusion, for the civilian may lack the political power or will to punish a popular military figure who shirks. The probability of punishment, then, is an exogenous factor that will vary with changes in the makeup of the civilian and military actors. For instance, the combination of a popular president and an unpopular general will result in a different probability of punishment than the combination of an unpopular president and a popular general. Likewise, unified agents might be harder to punish than divided agents; conversely, unified principals may be more likely to punish than divided principals.[6]

The Civil-Military Game in Formal Terms

The foregoing can be represented in the following simple game. Suppose there are two players, Civ and Mil. The game begins with Civ deciding how to monitor the delegation given to Mil. Once the monitoring is set, Mil decides whether to shirk or not, followed by Civ's response either to punish or

not. In such a game, there are six possible outcomes. I will use uppercase letters to denote the payoffs to civilians and lowercase to denote payoffs to the military. Note, therefore, that $S2$, the civilian payoff of military shirking if Civ does not punish is entirely different from $s2$, the military payoff of shirking with intrusive monitoring.

Players:

Civ (decides how to monitor and then punishes or not)
Mil (decides whether to work or shirk)

Game sequence:

1. Civ decides whether to monitor intrusively or not (police patrol versus fire alarm)
2. Mil decides whether to work or shirk
3. Nature decides whether shirking is detected
4. Civ punishes or not

Lexicon:

W: Work done as the civilian principal wanted it
S: Work done as the military agent wanted it (shirking)
$C1$: Civilian costs of monitoring (time/effort costs and the policy costs of inexpert meddling)
$S1$: The civilian payoff of military shirking if civilian punishes
$S2$: The civilian payoff of military shirking if civilian does not punish
p: Costs to military of punishment (makes shirking less valuable to the military)
$w1$: The military payoff of working with unintrusive monitoring
$w2$: The military payoff of working with intrusive monitoring
$s1$: The military payoff of shirking with unintrusive monitoring
$s2$: The military payoff of shirking with intrusive monitoring.
a: The probability of detecting shirking if there is unintrusive monitoring
b: The probability of detecting shirking if there is intrusive monitoring
g: The probability of punishing shirking

Outcomes:

$O1$: Civ monitors intrusively; Mil works $[W - C1, w2]$
$O2$: Civ monitors intrusively; Mil shirks; Civ punishes $[S1 - C1, s2 - p]$

$O3$: Civ monitors intrusively; Mil shirks; Civ does not punish [$S2 - C1$, $s2$]
$O4$: Civ does not monitor intrusively; Mil works [W, $w1$]
$O5$: Civ does not monitor intrusively; Mil shirks; Civ punishes [$S1$, $s1 - p$]
$O6$: Civ does not monitor intrusively; Mil shirks; Civ does not punish [$S2$, $s1$]

Restrictions:

$b > a$, the probability that shirking will be detected is greater if the civilian monitors intrusively
$C1 > 0$, there is some finite cost to monitoring
$p > 0$, the military perceives some finite cost to punishing

Assumptions:

g, the probability of punishing shirking, if shirking is detected, is exogenously determined. This parameter is a function of factors external to the model, such as the relative popularity or political strength of civilian and military leaders, or the individual style of a civilian principal.
$s1 > s2$, and $w1 > w2$, the military payoff of shirking (or working) with no monitoring is greater than the military payoff of shirking (or working) with monitoring, independent of any punishment. This expresses, in formal terms, the common claim of organization theory that military organizations do not like intrusive monitoring.

How will Civ and Mil rank their preferences over these six outcomes? The ranking for Civ is straightforward, based on the notion of the civilian as sensitive to costs. Civ would prefer to have the work done with the least amount of delegation and monitoring costs. If Civ is going to invest the time and effort to monitor, Civ would prefer to detect any shirking and, consequently, to punish it if detected. (As discussed earlier, Civ's decision to punish detected shirking is not automatic. The model would capture the various factors that make punishing less likely in low values for g). Thus Civ would first prefer the work outcomes W and $W - C1$, in descending order of cost. Civ's preference ranking for the four shirking outcomes reflects the desire to punish shirking and the desire not to have to spend the effort to monitor intrusively: $S1$, $S1 - C1$, $S2$, and $S2 - C1$.

As discussed in the previous chapter, the agent's orientation means that Mil has a rank ordering of preferences different from Civ's. Indeed if they

had the same preferences, many of the agency problems would virtually disappear; there would still be a relational component to the principal-agent interaction, however, because in a democracy the responsible civilian officials must ultimately retain authority. Consequently, Mil would prefer to do things its own way, especially if it did not get punished for it, and Mil always prefers less-intrusive monitoring; thus Mil's first two preferences are $s1$ and $s2$. The rest of the ordering is debatable. Punishment is a negative value in that it reduces the utility of the shirking outcome from the point of view of Mil; if Mil is going to shirk, it does not want to get punished. But whether or not this reduces the value of shirking below the value of working depends on Mil's cardinal values, the three parameters working *(w),* shirking *(s),* and punishment *(p),* and it is not feasible to measure the cardinal values with any confidence. In societies where the military has reason to believe that p is always negligible—for instance, in Guatemala for most of its history—there is nothing to reduce the shirking outcome relative to the working outcome. In such a case, the military may rank all forms of shirking ahead of working. However, given the empirical domain of my study (the American democracy), it seems more plausible to assume that the military prefers working to shirking with punishment. Thus, the remaining ranking is: $w1$, $w2$, $s1 - p$, $s2 - p$. Although Huntington obviously does not frame his argument this way, setting the military preference in this way is at least partially consistent with his theory. He dismisses the shirking possibility entirely in the case of a professional military (thus he would challenge a ranking that put shirking without punishment ahead of working), but by extension his logic must also place working ahead of shirking with punishment. Thus, the ranking I use is essentially Huntington's, but with the additional twist that a professional military might shirk if it thought it could get away with it. Table 4.1 summarizes the preference order.

Figure 4.1 depicts the expanded game. Before analyzing the game for equilibria conditions, it is possible to group together the branches under the shirking node. Given the uncertainty over whether shirking will be detected and whether it will be punished if detected, the payoff for shirking can be viewed as the expected value of shirking without getting punished minus the expected value of shirking and getting punished. Through basic algebraic steps, this simplifies the game into the one depicted in Figure 4.2.

It is now possible to analyze the game for equilibria, for instance to see the conditions under which we would expect Mil to work or shirk.[7] By the rationalist assumption, Mil will work when it expects a better payoff from that

Table 4.1 Preferences of the players

Ranking	Civ	Mil
1	W	$s1$
2	$W-C1$	$s2$
3	$S1$	$w1$
4	$S1-C1$	$w2$
5	$S2$	$s1-p$
6	$S2-C1$	$s2-p$

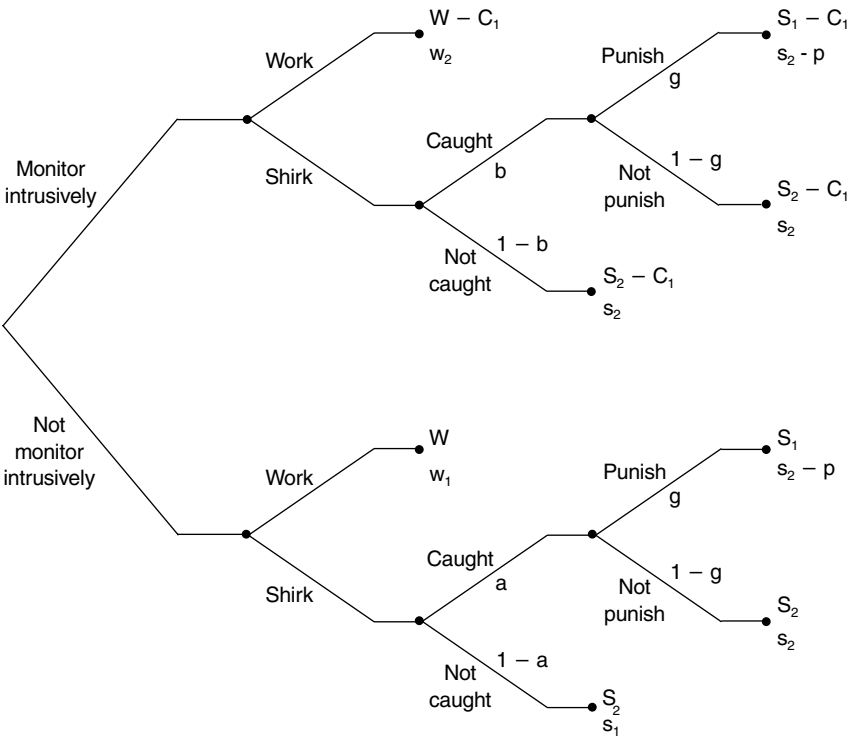

Figure 4.1 Expanded civil-military game

course of action. If Mil finds itself in a world of intrusive monitoring, the payoff from working will be greater than the payoff from shirking if the following inequality is true:

$$w2 > s2 - bgp$$

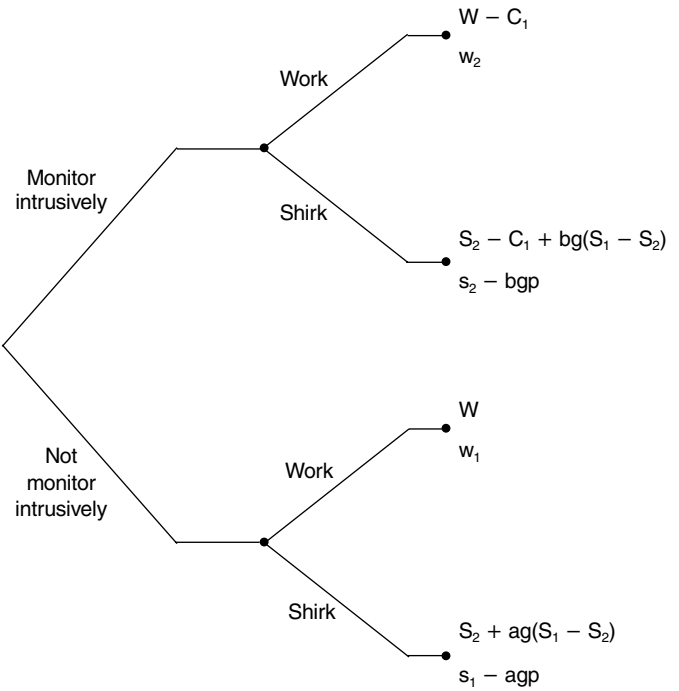

Figure 4.2 Reduced civil-military game

If Mil finds itself in a world of no intrusive monitoring, the payoff from working will be greater than the payoff from shirking if the following inequality is true:

$$w1 > s1 - agp$$

By assumption we know that Mil prefers shirking to working, $s2 > w2$ and $s1 > w1$. Thus Mil will work only if the punishment is great enough to reduce the net gain of shirking below that of working. If the punishment *(p)* is too light, Mil may shirk regardless of how likely it believes it is that the punishment will be levied against it (that is, how great *a, b,* and *g* are); intuitively, even if an agent is certain it will receive punishment, this may not be an effective deterrent if the punishment is trivial. The probability parameters are distributed between 0 and 1, while the punishment parameter is effectively without a maximum. Thus, it is possible to identify $p(\min)$, the minimum punishment necessary to affect the agent's decision. This parameter, $p(\min)$, is a function of the gap between *s* and *w,* the difference between

Mil's subjective value for shirking and Mil's subjective value for working; specifically,

$$p(\text{min}) = s - w$$

When the punishment involves pain less than the value Mil sees from shirking—when $p < p(\text{min})$—then the likelihood of receiving such punishment does not matter anymore. When p is greater than $p(\text{min})$, then the probability of receiving punishment can decisively influence Mil's calculation.

If traditional organization theory's claim that the military dislikes intrusive monitoring is not true, then the payoffs for the game would be different: specifically, $s2$ would equal $s1$ and $w2$ would equal $w1$. In this special case, other things being equal, the decision to work or shirk depends only on the probability of getting caught. And since the probability of getting caught with monitoring *(b)* is greater than the probability without monitoring *(a)*, then the military agent would always be more likely to shirk under nonintrusive monitoring than under intrusive monitoring.

Since monitoring is a continuum, ranging from very intrusive to very unintrusive, the probabilities of getting caught are likewise continuous. At the limit, the probability of getting caught under nonintrusive monitoring can approach the probability of getting caught under intrusive monitoring (a can approach b), for instance if the issue area is such that intrusive monitoring is not very reliable or nonintrusive monitoring (like relying on a media fire alarm) *is* very reliable, or both. In such a case, the difference in the net payoff of working versus shirking under intrusive monitoring and under no intrusive monitoring may disappear altogether.

Civ's best choice, whether or not to monitor intrusively, depends on how Civ assesses four possible agent responses: that Mil always works, that Mil always shirks, that Mil works if monitored but shirks if not monitored, and, finally, that Mil shirks if monitored and works if not monitored. Table 4.2 describes the conditions under which each of these four responses holds.

What would be Civ's best response in each of these cases? The easiest case is if Mil always works. The conditions for such a Mil strategy are straightforward: Mil will pursue such a strategy in a world where its intrinsic payoff from shirking is small relative to working (its policy preference is not that different from that of Civ's) or it has a relatively high expectation of punishment if it shirks, or both. In such a world, Civ is comparing payoffs W and $W - C1$, the payoffs for monitoring unintrusively and monitoring intrusively, respectively. So long as there is some cost to monitoring ($C1 > 0$), then given

Table 4.2 Military responses and their associated conditions

Responses	Payoff conditions under which Mil would have such a response
Always work	$w1 > s1 - agp$ and $w2 > s2 - bgp$
Always shirk	$w1 < s1 - agp$ and $w2 < s2 - bgp$
Work if monitored intrusively, shirk if not monitored intrusively	$w2 > s2 - bgp$ and $w1 < s1 - agp$
Shirk if monitored intrusively, work if not monitored intrusively	$w2 < s2 - bgp$ and $w1 > s1 - agp$

a cost-sensitive Civ, Civ will most prefer *W*, the payoff for not monitoring intrusively. If Mil always works, Civ's best choice is not to monitor intrusively—in other words, Civ never monitors intrusively.

Note that this set of results essentially replicates Huntington's prescription. Huntington recommends objective control, encapsulated here as "nonintrusive monitoring," as the best way for civilians to get their most favored outcome, *W*. Huntington is correct provided that the conditions are met; that is, provided that the difference in policy preferences is small or the military has a high expectation for punishment. As we will explore in greater detail in Chapter 5, Huntington's claim that professional militaries will obey civilians and thus allow civilians to adopt objective control is, in terms of the model, a claim about the preference rankings of professional militaries; since Huntington's story contains no punishment, there is no other leverage point at which Huntington affects the game. Thus, his claim about professionalism is a claim that professional militaries will share civilian preferences, so civilians need not monitor intrusively. If the military is guaranteed to work, then the civilian would clearly prefer not to monitor intrusively, since of necessity W is greater than $W - C1$ (although as monitoring costs approach zero the civilian would become increasingly indifferent between intrusive and nonintrusive monitoring, even if the military was guaranteed to work). Hence, Huntington's normative claim: if you can be sure the military will do what you want, you need not closely monitor the military. Stated in this way, of course, it skirts on the edge of a tautology. To achieve this convergence, he

recommends that *civilians change their preferences to match the military's*—this is how the model would operationalize his recommendation that American civilian society eschew its traditional liberalism and embrace the conservatism of the military ethic. In the limit, however, if civilians and the military share preference rankings, then the concept of working and shirking loses much of its meaning. There is not much of a principal-agent problem when preference rankings are identical.

Thus Huntington's account is true, but not helpful. The civil-military challenge is to get work outcomes when civilian and military preferences diverge. If they diverge, then there must be some other factor at work—the punishment expectation has to be that factor, and that factor is partly endogenous to the reliability of the monitoring system in place.

Turning to the case in which Mil always shirks, Civ makes the following comparison:

$$S2 + ag(S1 - S2) \text{ versus}$$
$$S2 - C1 + bg(S1 - S2)$$

This is the case when Mil's expected payoff to shirking always exceeds its expected payoff to working, because its policy preferences sharply diverge from those of Civ or because it has a low expectation of receiving serious punishment. Civ's best choice is to monitor intrusively when:

$$S2 - C1 + bg(S1 - S2) > S2 + ag(S1 - S2)$$

Grouping terms together simplifies the inequality somewhat:

$$bg(S1 - S2) > ag(S1 - S2) + C1$$

Now by assumption, the probability of being caught if there is no intrusive monitoring is less than the probability of being caught if there is intrusive monitoring, that is $a < b$. Thus, $bg(S1 - S2)$ will always be greater than $ag(S1 - S2)$. If, however, the costs of monitoring are very great ($C1$ is very large), then the inequality is less likely to be true. How great must $C1$ be for Civ to decide not to monitor intrusively? By solving the inequality for $C1$, we get the following:

$$C1 < bg(S1 - S2) - ag(S1 - S2), \text{ or,}$$
$$C1 < (bg - ag)(S1 - S2)$$

The inequality says that the costs of monitoring must be very large to get Civ not to monitor intrusively if one or both of the following conditions are true:

first, if b is much bigger than a, meaning that the reliability boost from intrusive monitoring is very high; second, if $S1$ is much bigger than $S2$, meaning that Civ's value from shirking with punishment is much higher than Civ's value from letting shirking go unpunished. In plain English, in the case where Mil always shirks, then Civ will monitor intrusively if the costs of monitoring are not great, or if monitoring intrusively will significantly increase the chance of detecting shirking, or if Civ is very concerned not to let some shirking go unpunished.

In the third case, Mil will work if monitored and will shirk if not monitored. In this case, Civ compares $W - C1$ and $S2 + ag(S1 - S2)$. Civ will monitor if:

$$W - C1 > S2 + ag(S1 - S2)$$

Grouping the terms in another way yields the following equivalent expression, which captures the factors as a function of the gap between civilian and military preferences:

$$W - S2 > C1 + ag(S1 - S2)$$

When the Civ payoff from working, less any payoff Civ would receive from shirking, is greater than the costs of monitoring plus the expected value of the shirking with punishment minus the shirking without punishment, then we would expect Civ to monitor intrusively. Solving for $C1$ tells us how low the costs of monitoring have to be to satisfy this condition:

$$C1 < W - S2 - ag(S1 - S2)$$

As explained in Appendix 4.1, this condition is more easily maintained than the condition in the previous case (in which Mil always shirks). If Mil is pursuing a strategy of working if monitored intrusively and shirking if not monitored intrusively, then Civ will monitor intrusively even if the costs of monitoring are relatively high, high enough to cause Civ to abandon intrusive monitoring in the case where Mil always shirks.

Finally, Civ considers the case in which Mil will shirk if monitored and work if not monitored. This is a counterintuitive case, a fact reflected in the special combination of Mil payoff conditions necessary for this case to obtain. For Mil to pursue such a strategy, it would have to be true that Mil prefers working when there is no monitoring and shirking when there is monitoring. In formal terms, it must be simultaneously true that $w2 < s2 - bgp$ and that $w1 > s1 - agp$. As explained in Appendix 4.2, so long as the impact of intrusive monitoring degrades Mil's estimation of the value of shirking

the same as it degrades Mil's estimation of the value of working (so long as $s1 - s2 = w1 - w2$), then this inequality cannot hold. Therefore, we do not need to consider this case.

Conclusion

The model thus captures observable patterns of civil-military relations—combinations of civilian choices regarding intrusive monitoring and military choices regarding working and shirking—as a function of other potentially observable factors: the costs of monitoring, the probabilities of being punished, and so on. The agency model, moreover, is making a causal argument in these cases, that specific outcomes are observed because certain equilibrium conditions rather than others are also met in each case: for example, civilians are choosing more intrusive monitoring because the costs of monitoring are low or because the expectations of shirking are high, and the military is choosing to work because its preferences are converging with those of civilians or because the likelihood of getting punished is high. Of course, such answers beg further questions—why are costs of monitoring low, and why are expectations of punishment high? Agency theory raises these questions but it ultimately does not answer them. Perhaps this is a limitation of agency theory, but similar limitations apply to all other theories as well. And, uniquely, agency theory tells us why we should care about such questions, which do not arise from analyses based on traditional civil-military relations theory.

The algebraic expressions generated by the formal model may seem too complicated and overly reliant on intersubjective comparisons to yield definitive insights. How can we tell whether the costs of intrusive monitoring are less than the value of working minus the value of shirking, and so on? As we shall see in subsequent chapters, if we have reason to expect systematic changes in some of these parameters, we should be able to assess the likelihood that these inequalities will hold, and hence the likelihood that civilians will monitor intrusively or that the military will shirk. Moreover, like all social science, agency theory can do no more than make a probabilistic claim—that given certain values for the equilibrium conditions, we expect that one set of outcomes is more likely than another set of outcomes. The idiosyncracies of willful human agents mean that we do not live in a deterministic social universe—game theory, for all its ambitions for greater precision, does not pretend otherwise.

Despite the potentially off-putting jargon of the formal method, the

agency model is actually quite simple and the results may even seem intuitive. As the probability of detecting or the probability of punishing goes down, the military agent is more likely to shirk. The probability of catching wrongdoing is a function of the type of monitoring done. And so on. A more complicated model, perhaps modified along lines discussed in the concluding chapter, might yield a larger array of counterintuitive hypotheses.

As a point of departure for the first-cut empirical investigations of the next several chapters, however, even these intuitive results represent an advance over traditional civil-military relations theory. What is striking about agency theory is that factors that emerge as so obviously central from the deductive logic of the model—the costs of monitoring, the expectations of punishment, the strategic calculus of the actors—are nevertheless essentially absent in traditional civil-military relations theory. Within the confines of traditional Huntingtonian or Janowitzean theory, one does not end up with hypotheses about the military's expectations of being punished. Beginning from the deductive base of agency theory, such hypotheses are inescapable.

While agency theory represents a dramatically different way of thinking about civil-military relations, it does not require us to reject all the insights of traditional civil-military relations theory. On the contrary, the agency model subsumes much of what traditional theory already argues. For instance, the model shows how Huntington's arguments about the optimal form of delegation can be true under certain conditions, some of which Huntington recognized and some of which he did not explicitly identify.

The monopoly on the legitimate use of force is what distinguishes government from other institutions. Understanding how this monopoly is delegated and controlled is therefore central to the enterprise of political science. My model provides what is lacking in traditional civil-military relations theory: the microfoundations, that is, how the structure of choices and incentives facing the relevant actors shapes their relations. Modeling these choices and incentives makes the step-by-step logic of the argument more explicit, and this allows the logic to be more readily tested and either supported or undermined by empirical evidence (the task for Chapters 5 and 6). It also paves the way to exploring what political scientists call the "causal mechanism," the logic whereby observed correlations are understood to be causally related.

Agency theory draws upon insights gleaned from the study of other domestic institutions, but is tailored to the political challenges peculiar to the civil-military problematique. The model seeks to explain changes in patterns

of civil-military relations over time and in response to at least potentially observable features of particular civil-military relationships. The model uses standard insights from principal-agent analysis to identify a wide range of control mechanisms available to principals. The model goes beyond many previous applications of principal-agency, however, in offering hypotheses for how principals might choose to monitor that delegation, in light of the agents' incentives to shirk.

The model developed here is already an advance over prevailing treatments of civil-military relations. It recognizes that the civil-military relationship is characterized by strategic political interaction, even in cases (as in the United States) where the most basic question of "who is in charge" seems settled. It treats civilian control not as a once-and-done choice between Weberian ideal types but rather as an ongoing decision about how to monitor the delegation of responsibility to the military. It reflects the fact that civilians and military leaders confront the problems of agency on a day-to-day basis. Therefore this model is particularly well suited to illuminating changes over time.

It is also an important theoretical advance over existing principal-agent analyses and not simply an application of established theories to a new empirical domain. By endogenizing the monitoring decision, it specifically raises the question of how principals select from among an array of options for mitigating the problems of agency. The bulk of the existing political principal-agent literature is devoted to challenging the proposition that delegation amounts to abdication. In comparison, with a few exceptions (Bawn 1995; Brehm and Gates 1992a, 1992b; Hamilton and Schroeder 1994; Lupia and McCubbins 1994; and Spence no date), remarkably little attention is paid to the determinants of the principal's choice. Likewise, by treating the probability of punishment as a variable (albeit an exogenous variable), agency theory shows how shirking can arise even in situations where the agent's behavior is likely to be exposed. Finally, the model also extends principal-agent analysis beyond most existing political applications by treating the agent as a strategic actor rather than a passive player simply acted on by a wiser principal.

APPENDIX 4.1

In this appendix I show that the conditions under which the civilian (Civ) would monitor intrusively are less restrictive if the military (Mil) is pursuing

a strategy of working if monitored and shirking if not monitored than if Mil is pursuing a strategy of always shirking.

If Mil is always shirking, then Civ will monitor intrusively if the costs of monitoring meet the following condition:

$$C1 < (bg - ag)(S1 - S2) \qquad \textit{inequality 1}$$

If Mil is working if monitored intrusively and shirking if not monitored intrusively, Civ will monitor intrusively if the costs of monitoring (which I will call here $C1^*$) meet the following condition:

$$C1^* < W - S2 - ag(S1 - S2) \qquad \textit{inequality 2}$$

By assumption, we also know that $S1 < W$, because Civ's payoff from Mil's working is higher than Civ's payoff from Mil's shirking with punishment. And for the same reason, $S2 < S1$. Furthermore, because bg is a probability, it must lie between 0 and 1. Therefore the following expression must also be true:

$$[S2 + bg(S1 - S2)] \leq S1 < W$$

If we substitute the leftmost expression from this inequality for W in another expression, we would reduce that expression. Thus,

$$W - S2 - ag(S1 - S2) > [S2 + bg(S1 - S2)] - S2 - ag(S1 - S2)$$

The right side of this inequality can be simplified algebraically to yield the following:

$$W - S2 - ag(S1 - S2) > (bg - ag)(S1 - S2)$$

The righthand expression is the same one appearing in inequality 1 and the lefthand expression is the same one appearing in inequality 2. Therefore, substituting for the costs of monitoring, we see that:

$$C1^* > C1$$

APPENDIX 4.2

In this appendix I show that the fourth notional military strategy does not hold in equilibrium. Consider the fourth Mil strategy, to shirk if monitored intrusively and work if not monitored intrusively. This is the best Mil strategy when the following two inequalities hold: $w2 < s2 - bgp$ and $w1 > s1 -$

agp. Given the assumptions and restrictions of the model, and given a reasonable additional inference, these conditions cannot be met simultaneously.

By restriction $b > a$, the probability of being caught is greater with intrusive monitoring than with no intrusive monitoring. Therefore, $bgp > agp$. By assumption, $w1 > w2$ and $s1 > s2$; consistent with traditional organization theory, Mil intrinsically does not like intrusive monitoring, thus if Mil is going to work, Mil prefers working without intrusive monitoring, and the same holds for shirking. It also seems plausible that the *amount* of this Mil preference for no intrusive monitoring is the same whether Mil is considering working or shirking; when Mil thinks about the four options, namely the intrusive monitoring versus no intrusive monitoring possibilities for both working and shirking, Mil prefers the no-intrusive-monitoring outcome by the same amount, regardless of whether it will work or shirk. In formal terms, this would be: $s1 - s2 = w1 - w2$. This expression is equivalent to: $w2 - s2 = w1 - s1$.

Given this auxiliary assumption, it is possible to show algebraically that the inequality conditions cannot hold:

$$w1 > s1 - agp \text{ and } w2 < s2 - bgp; \text{ thus,}$$
$$w1 - s1 + agp > 0 \text{ and } w2 - s2 + bgp < 0; \text{ thus,}$$
$$w1 - s1 + agp > w2 - s2 + bgp;$$

since $w1 - s1 = w2 - s2$, we can substitute and get

$$w1 - s1 + agp > w1 - s1 + bgp; \text{ or,}$$
$$agp > bgp$$

But by assumption $bgp > agp$, therefore the inequality conditions cannot hold. Q.E.D.

Note that this is true only because we have made the reasonable assumption that traditional theory's claim that organizations do not like intrusion will produce the same amount of intrinsic disutility whether Mil contemplates working or shirking. If this assumption is not true and, on the contrary, the presence of intrusive monitoring changes the relative intrinsic utility difference between shirking versus working, then Mil might indeed consider working if not monitored and shirking if monitored. In such a case, Civ would have to consider this fourth military strategy, producing a fourth set of conditions, as follows.

Civ compares $S2 + bg(S1 - S2) - C1$ with W. In this case, Civ will monitor intrusively if the following inequality holds:

$$W < S2 + bg(S1 - S2) - C1$$

Regrouping the terms yields:

$$W - S2 < bg(S1 - S2) - C1$$

Given the ordinal payoff structure Civ, $W - S2$ is always greater than $S1 - S2$. Also, bg is always less than or equal to 1; $C1$ is always at least greater than 0. Therefore, this inequality never holds and in this instance the model yields a trivial result: if Mil shirks if monitored intrusively and works if not monitored intrusively, it never makes sense for Civ to monitor intrusively.