# WHEN IS STRATEGIC BOMBING EFFECTIVE?

## DOMESTIC LEGITIMACY AND AERIAL DENIAL

### AARON BELKIN, MICHAEL CLARK, GULRIZ GOKCEK, ROBERT HINCKLEY, THOMAS KNECHT, AND ERIC PATTERSON

WHEN ARE AERIAL bombing strategies effective instruments for coercing states to change their policies? Recent military confrontations including the U.S. campaign against the Taliban in Afghanistan, the 1999 conflict between Serbia and NATO, and the 1991 Gulf War suggest that aerial bombing may be one of the most frequently used military strategies in post–cold war disputes. Yet questions remain about its operation and effectiveness. According to most participants in a recent debate on this subject, air power may be effective for coercion when attackers destroy a rival's military capacity. This strategy, known as *denial*, entails the use of air power to convince an opponent to capitulate by *denying* its military capacity to wage war.[1] Both ardent and partial advocates of denial strategies, however, agree that their use does not achieve coercion all of the time. Focusing on large-scale aerial campaigns, this study attempts to add to the recent debate by specifying conditions that can explain when denial strategies are likely to be effective and when they are likely to fail. We focus on aerial denial because, given the near-consensus as to its effectiveness, it is likely to be a commonly used strategy in the post–cold war world.

In brief, our argument is that the effectiveness of denial strategies may depend in part on the domestic legitimacy of target states' regimes. Aerial denial is more likely to lead to coercion when political leaders of target states lack domestic legitimacy than when they are seen as legitimate. In low legitimacy regimes, civilian leaders often undermine the effectiveness and professionalism

Aaron Belkin is Assistant Professor of Political Science at the University of California, Santa Barbara. Michael Clark, Gulriz Gokcek, Robert Hinckley, Thomas Knecht, and Eric Patterson are doctoral candidates in Political Science at the University of California, Santa Barbara.

1. Robert A. Pape, "The Air Force Strikes Back: A Reply to Barry Watts and John Warden," *Security Studies* 7, no. 2 (1997/98): 197.

of their own military forces by shuffling officers on a random basis, fragmenting the armed services into rival factions, and imprisoning, torturing, or executing officers. In turn, these coup-proofing steps can compromise the military's adaptability and ability to withstand aerial bombing. By contrast, high-legitimacy regimes are less likely to take steps to undermine their forces' ability to defend against aerial attack.

| Independent variable | Intervening variables | | Dependent variable |
|---|---|---|---|
| Domestic legiti-Macy of target | | | Ability of aerial denial to coerce |
| High legitimacy (low coup-risk) | Healthy civil-military relations | Strong fighting capability | Coercion likely to Fail |
| Low legitimacy (high coup-risk) | Pathological civil-military relations | Weak fighting capability | Coercion likely to succeed |

From its first use in twentieth century warfare, the role of airpower in defense and offense has been the subject of considerable analysis. At this point in the conversation, scholars disagree over many aspects of the use and effectiveness of coercive air power. We do not review all aspects of the recent debate since clear, accessible overviews are available elsewhere.[2] Rather, we identify points of agreement that emerge from the recent conversation in order to specify the conventional wisdom as it stands today. Then, we use that conventional wisdom as a launching point for our own analysis.

Based on the recent debate over coercive air power, it appears that most scholars agree on the following three points. First, most scholars agree that bombing civilians alone rarely is sufficient for achieving coercion. Gioulo Douhet believed that massive destruction of population centers could inspire

2. The most recent reviews are contained in Michael Horowitz and Dan Reiter, "When Does Aerial Bombing Work? Quantitative Empirical Tests, 1917*1999," *Journal of Conflict Resolution* 45, no. 2 (2001): 147*73; Daniel L. Byman and Matthew C. Waxman, "Kosovo and the Great Air Power Debate," *International Security* 24, no. 4 (spring 2000): 5*38; Karl Mueller, "Strategies of Coercion: Denial, Punishment, and the Future of Air Power," *Security Studies* 7, no. 3 (spring 1998): 182*228; Barry D. Watts, "Ignoring Reality: Problems of Theory and Evidence in Security Studies," *Security Studies* 7, no. 2 (winter 1997/98): 115*71; John A.Warden III, "Success in Modern War: A Response to Robert Pape's Bombing to Win," *Security Studies* 7, no. 2 (winter 1997/98): 172*90.

such dread among civilians that they would rebel against their leaders and demand an end to the conflict.[3] Similarly, Hugh Trenchard of the Royal Air Force foresaw aerial campaigns as contests of wills and therefore battles of attrition: "the nation that would stand being bombed the longest would win in the end."[4] In America, General Billy Mitchell, ultimately court-martialed for his controversial and highly publicized views, argued that bombing of civilians would shatter the enemy's will quickly and provide a much cheaper victory than a ground war.[5]

Early experiences, however, undermined the tenability of this position. Grueling campaigns during the Battle of Britain and the Allied bombing of Germany and Japan demonstrated that aerial attacks of civilian centers did not result in desired policy changes by the target government. Recent critiques of bombing civilians also reinforce suspicions about the effectiveness of this strategy. The strongest form of the critique is that attacking civilians never leads to coercion because bombing is too bloody to be a politically viable strategy for the attacking state and because it causes a rally-around-the-flag effect in the target state. In a recent study, for example, Thomas Griffith Jr. concluded that bombing electrical plants to demoralize the population often backfires by resulting in poor sanitation and disease that ultimately create a humanitarian and public relations fiasco for the attacker.[6] Robert Pape says that "no coercive air strategy based on threatening or killing civilians has ever succeeded."[7] The more limited variant of the critique is that bombing civilians sometimes can facilitate coercion in combination with other coercive strategies or when vital interests in the target state are not at stake.[8] Both strong and weak critics seem to agree, however, that bombing civilians alone is rarely if ever sufficient for achieving coercion.

A second area of consensus among scholars is that air power can be an effective tool for coercing states to change their policies when attackers use aeri-

---

3. Giulio Douhet, *Command of the Air* (New York: Coward-Mcann, 1942), trans. Dino Ferrari.

4. Quoted in Robert Pape, *Bombing to Win* (Ithaca: Cornell University Press, 1996), 61.

5. For a discussion of "industrial web theory" see Pape, *Bombing to Win*, 62–64.

6. Thomas E. Griffith Jr., "Strategic Air Attacks on Electrical Power: Balancing Political Consequences and Military Action," *Strategic Review* 23, no 4 (fall 1995): **pp. #.** Some scholars, however, do believe that the success of strategic bombing in Kosovo resulted from punishment of civilians. See Stephen Hosmer, *The Conflict Over Kosovo: Why Milosevic Decided to Settle When He Did*, MR-1351-AF *Santa Monica, Calif.: RAND, 2001).

7. Pape, "The Air Force Strikes Back," 193.

8. Mueller, "Strategies of Coercion"; Watts, "Ignoring Reality: Problems of Theory and Evidence in Security Studies"; Warden, "Success in Modern War: A Response to Robert Pape's Bombing to Win."

al capabilities to destroy the military capacity of their rivals.[9] Eliot Cohen, for example, argues that air power can be decisive against military and political targets, particularly when attackers use stealth technology, global positioning systems, and precision guided bombing techniques.[10] Edward Luttwak suggests that advanced weapons can be used effectively against enemy military targets and communication, command, and control.[11] Robert Pape outlines several variants of denial strategies including aerial support for ground forces, destruction of military production, and rear-area attacks on supply networks, reinforcements and command-and-control facilities.[12] He suggests that for denial strategies to achieve coercion they must exploit the vulnerabilities of opponents' military strategies by destroying enemy forces, interdicting supplies, and disrupting movement and communication.[13]

Even though critics have questioned whether or not aerial denial is the *only* strategy that can lead to successful coercion, there is a near-consensus that air power *often* can achieve coercion if attackers emphasize the destruction of their opponents' military capabilities. In other words, even critics of denial concede that destruction of enemy military targets, whether as sole, primary, or partial objectives among a combination of targets, often is an important aspect of successful aerial coercion. Barry Watts, for example, concedes that the denial theory predicts actual coercive outcomes in war about seventy percent of the time.[14] John Warden acknowledges that denial based in part on theater air attacks convinced Iraq to withdraw from Kuwait during the Gulf War.[15] For all of the controversy in the recent debate on the use of air power, analysts seem to agree that attacking military targets often is an important aspect of successful aerial coercion.

A third area of agreement is that while many strategists and analysts believe that targeting military forces (denial) often is an important precondition for successful aerial coercion, even the most strident advocates of denial agree that it can fail. Pape, for example, says that "denial does not always work."[16]

9. Horowitz and Reiter, "When Does Aerial Bombing Work? Quantitative Empirical Tests, 1917–1999."

10. Eliot A. Cohen, "The Mystique of U.S. Air Power," *Foreign Affairs* 73, no. 1 (January-February 1994): 109–24.

11. Edward N. Luttwak, "Victory Through Airpower," *Commentary* 92, no. 2 (August 1991): 27–30.

12. Pape, *Bombing to Win*, 70–72.

13. Robert A. Pape, "The Limits of Precision-Guided Air Power," *Security Studies* 7, no.2 (winter 1997/98), 95.

14. While Watts's broader point is that quantification is a dubious enterprise, he does say that denial appears to predict coercive outcomes successfully 70 percent of the time. Watts, "Ignoring Reality: The Problems of Theory and Evidence in Security Studies," 141.

15. Warden, "Success in Modern War: A Response to Robert Pape's *Bombing to Win*," 184.

16. Pape, *Bombing to Win*, 314.

Mueller agrees that "while denial may produce successful coercion, it may fail to coerce."[17] He says that "denial appears to be a necessary but not a sufficient condition for coercive success."[18]

To summarize the current conventional wisdom that emerges from the recent conversation over the use and role of air power, there is a spectrum of opinion as to the frequency with which denial is an effective strategy for achieving coercion, ranging from "often" to "usually.." It is important to note, however, that even though scholars agree that denial can succeed and fail, with just one exception (addressed below), they have neglected to specify *when* denial tends to work and when it does not.[19] In other words, they have not identified conditions that may help distinguish among failed and successful attempts at denial. Even Pape acknowledges that he has not "fully articulated a contingent theory of the success and failure of coercion by denial…."[20]

We suggest that one reason for this shortcoming may be that most existing approaches fail to take domestic politics of the target states into account. More specifically, existing typologies classify different bombing strategies according to type of target and coercive mechanism, but generally fail to include political factors in their explanatory frameworks. Some scholars appear to recognize this oversight. Mueller, for example, says that "In order to anticipate the effects of air attack not just on individual aim points and targets, but on the enemy's behavior, it is necessary to understand a great deal about how political systems, national economies, and armed forces function, react, and interact."[21] With one exception discussed below, however, Mueller's insight has not been incorporated into theories of aerial coercion.[22]

One new quantitative study by Michael Horowitz and Dan Reiter does test whether successful coercion depends on the level of democracy in the target state. Although the authors conclude that the target's regime type does not matter, several qualifications deserve consideration. First, the authors fail to distinguish full-scale aerial campaigns (Germany vs. Poland, 1939) from pinpricks (United States vs. Libya, 1986) and include both types of these cases in

---

17. Mueller, "Strategies of Coercion," 191.

18. Ibid., 197; also Watts, "Ignoring Reality: Problems of Theory and Evidence in Security Studies," 141.

19. Horowitz and Reiter, "When Does Aerial Bombing Work? Quantitative Empirical Tests, 1917–1999."

20. Pape, "The Air Force Strikes Back," 198.

21. Mueller, "Strategies of Coercion," 207.

22. See, however, Stephen Hosmer, *Operations Against Enemy Leaders* (Santa Monica, Calif.: RAND, 2002). Although Hosmer does not focus exclusively on the use of aerial denial strategies for the sake of coercion, he does show that air power can facilitate regime change in weak targets.

their statistical analysis as if they reflected the same type of observation. [23] Second, the authors fail to include an independent variable for whether the attacker actually used a denial strategy, relying instead on the target's vulnerability to denial bombing. Vulnerability to denial is a poor proxy for whether the attacker actually used a denial strategy, as it does not capture the presence or absence of the "treatment" variable at all. Third, democracy and legitimacy are not equivalent. For example, North Vietnam was able to withstand American coercive bombing during the Vietnam War. Even though it was an authoritarian, communist regime, it was highly legitimate and its legitimacy was essential to military success.[24] Conversely, many democracies are quite illegitimate.[25] Hence, testing the effect of democracy is not the same as testing the effect of legitimacy.[26] Finally, Horowitz and Reiter's model includes nine independent variables but their dataset includes only fifty-three observations. The statistical insignificance of any of the probit coefficients (including the coefficient for democracy) under such conditions may be an artifact of the low number of observations. Related to this point, the authors fail to distinguish actual attacks (NATO vs. Yugoslavia, 1999) from threats (United States vs. USSR, 1962). Although they do conduct a test (p. 161) in which they control for the use or nonuse of force, the addition of the dummy variable for the use of force exacerbates the imbalance among the number of independent variables and the size of the data set.

For these reasons, and despite many valuable contributions that the study offers, we question its finding that the target state's regime type does not influence when denial bombing is successful. Focusing on cases of actual full-scale denial bombing, this study attempts to add to the recent debate on air power and coercion by bringing politics into the equation and by specifying political

23. Horowitz and Reiter, "When Does Aerial Bombing Work? Quantitative Empirical Tests, 1917–1999."

24. Stephen Biddle and Robert Zirkle, "Technology, Civil-Military Relations, and Warfare in the Developing World" (paper prepared for the annual meeting of the American Political Science Association, Washington, D.C., 3 September 1993); Stephen Biddle and Robert Zirkle, "Technology, Civil-Military Relations, and Warfare in the Developing World," *Journal of Strategic Studies* 19, no. 2 (June 1996): 171–212.

25. Huntington noted that in the first few years after the end of the cold war there were "more than 20 coups attempts against new democracies" (Samuel Huntington, keynote address, Conference on Civil-Military Relations and the Consolidation of Democracy, International Forum for Democratic Studies, Washington, D.C., 1995)

26. For additional analysis of the relationship between democracy and military effectiveness, see Dan Reiter and Allan C. Stam, "Democracy and Battlefield Military Effectiveness," *Journal of Conflict Resolution* 42, no. 3 (June 1998): 259–78; and Dan Reiter and Allan C. Stam, *Democracies at War* (forthcoming). Reiter and Stam show that democracies have more effective armed forces than other types of regimes because their emphasis on consent and individualistic cultures bolster the quality of military leadership and initiative.

conditions that may help account for when denial strategies are likely to work and when they are likely to fail.

<div align="center">

THE ARGUMENT: COERCIVE SUCCESS DEPENDS ON THE LEGITIMACY OF THE TARGET STATE

</div>

WE ARGUE THAT aerial-based denial strategies are more likely to lead to coercion when political leaders of target states lack domestic legitimacy. Low-legitimacy regimes tend to be unable to rely on their militaries' ability and willingness to continue to fight during times of crisis, while militaries and civilians in high-legitimacy regimes tend to remain loyal during aerial bombing campaigns. As a result, aerial-based denial strategies are likely to cause militaries in low-legitimacy regimes to crumble and to desert political leaders while both militaries and civilians in high-legitimacy regimes are more likely to adapt to rapidly changing circumstances even as bombing continues. [27]

Like most outcomes in the social sciences, the effectiveness of aerial denial is an overdetermined phenomenon. In focusing on a single cause—legitimacy—we neither intend to provide a complete explanation of the outcome, nor to imply that other factors are unimportant. Rather, our claim is that domestic factors in general and legitimacy in particular deserve consideration as plausible potential factors that may *help* explain why some particular attempts at aerial denial succeed and fail. To the extent that legitimacy plays an important causal role in some cases, the potentially causal role of other determinants does not undermine our argument.[28]

Before developing our argument, however, we turn to our conceptualization of coercion and legitimacy. Successful coercion refers to "the use of air power to make an adversary choose to act in a way that it otherwise would (or might)

---

27. While the risk of a coup can undermine many types of military effectiveness, our particular focus is the relationship between coup-risk and vulnerability to aerial denial. For other discussions of how coup-risk can undermine military effectiveness, see Risa Brooks, *Political-Military Relations and the Stability of Arab Regimes* (Oxford: Oxford University Press, 1998); Kenneth Pollack, *The Influence of Arab Culture on Arab Military Effectiveness.* (Ph.D. diss,, Massachusetts Institute of Technology, 1996); Reiter and Stam, "Democracy and Battlefield Military Effectiveness," 259–77; Stanislav Andreski, "On the Peaceful Disposition of Military Dictatorships," *Journal of Strategic Studies* 3, no. 3 (December 1980): 3–10.

28. For example, a colleague suggested that we integrate one of these determinants—the war aims of the attacker—into our argument because regimes that are fighting for their survival may be less vulnerable to aerial denial. War aims of the attacker may play an important causal role in the success or failure of aerial denial (although many states have fought poorly even when homeland capitulation was at stake) but we leave discussion of the impact of this factor to future research.

not act."[29] Coercive air power is successful if an adversary concedes without enduring the full cost of military defeat and it fails if the adversary does not concede or if it concedes only after total defeat.[30]

There are several ways to conceptualize legitimacy, and scholars have used different terminology for this idea including "compliance," "loyalty of opposition," and "consensus over rules."[31] In Max Weber's original formulation that continues to inform much of the literature, critical dimensions of legitimacy include the public's shared belief in and acknowledgement of the ruler's authority.[32] Disagreements exist about the degree to which Weber's conceptualization relies too heavily on transitory public attitudes and avoids moral criteria for settling evaluative disputes, and whether acknowledgment must be based on active moral judgment or simply an acceptance of the existing order.[33] While we remain agnostic on the latter two debates, the military's and the public's belief in the legitimate authority of the existing order is central to our understanding. More specifically, our understanding of legitimacy refers to polities in which citizens agree about the state's right to make rules, share a common willingness to redress grievances through institutional procedures and in which laws are sufficient for protecting individual and organizational interests from executive abuse. According to Migdal, "in many societies, state officials have simply not gained the right and ability to make many rules they would like…These struggles are over whether the state will be able to displace or harness other organizations…which make rules against the wishes and goals of state leaders."[34] Hence, we use the term "legitimacy" in order to focus on whether the state has the recognized right to legislate rules that people and organizations follow.

Political legitimacy surely is a matter of degree. As a simplifying heuristic, however, for the purposes of this study we treat legitimacy as a dichotomous concept by distinguishing between high and low legitimacy. We characterize

29. Pape, *Bombing to Win*, 184.

30. Robert A. Pape, "Coercion and Military Strategy: Why Denial Works and Punishment Doesn't," *Journal of Strategic Studies* 15, no.4 (1992): 425.

31. Michael N. Barnett, *Confronting the Costs of War* (Princeton: Princeton University Press, 1992); Juan J. Linz, "From Great Hopes to Civil War: The Breakdown of Democracy in Spain," in *The Breakdown of Democratic Regimes,* ed. Juan J. Linz and Alfred Stepan (Baltimore: Johns Hopkins University Press, 1979), 155. The next sections depend heavily on Aaron Belkin, "Performing the National Security State: Civil-Military Relations as a Cause of International Conflict" (Ph.D. diss., University of California-Berkeley, 1998), 83-85.

32. Muthiah Alagappa, ed., *Political Legitimacy in Southeast Asia* (Stanford: Stanford University Press, 1995), 11.

33. Ibid., 12; Robert Jackman, *Power Without Force: The Political Capacity of Nation States* (Ann Arbor: University of Michigan Press, 1993), 99.

34. Joel S. Migdal, *Strong Societies and Weak States* (Princeton: Princeton University Press, 1988), 31.

high-legitimacy regimes as those that achieve compliance with the rules of the state without resorting to the extensive use of physical force. Conversely, low-legitimacy regimes must apply or threaten to apply physical force on an ongoing basis to compel obedience. If they fail to use or threaten to use force, they may face challengers who resist complying with the rules of the state.[35]

The level of legitimacy must be determined on a case-by-case basis. Some regimes derive legitimacy from democratic traditions, although democratic elections are not sufficient for producing high levels of legitimacy in other cases. Some regimes derive legitimacy from nationalist, royalist, or other ideological credentials although these factors do not produce legitimacy in all cases. For those interested in analyzing this topic statistically, scholars have developed several quantitative indicators of legitimacy including direct taxes as a percentage of general government revenue and general government expenditure as a percentage of the gross domestic product.[36] These indicators are not perfect but they may provide some indication of regime legitimacy. Direct taxes as a percentage of government revenue, for example, may be a good indicator of legitimacy because they are much more difficult to collect than indirect taxes such as customs duties.[37]

As noted above, our argument is that low-legitimacy regimes tend to be unable to rely on their militaries' ability and willingness to continue to fight during bombing campaigns, while both the military as well as civilians of high-legitimacy regimes tend to remain loyal during aerial bombing. As a result, aerial-based denial strategies are likely to cause militaries in low-legitimacy regimes to crumble and to desert political leaders while militaries and civilians in high-legitimacy regimes are more likely to adapt even as bombing continues. We suggest that legitimate leaders may be more able to count on their own armed forces and civilians to respond effectively to aerial denial campaigns than illegitimate leaders for two reasons.

## LEGITIMACY AND PRINCIPAL-AGENT THEORY

According to principal-agent theory, civil-military relations reflect "a classic principal-agent relationship where the civilian-principal seeks ways to assure

35. Pape, "Coercion and Military Strategy: Why Denial Works and Punishment Doesn't," 116.
36. Douglas A. Hibbs, *Mass Political Violence: A Cross-National Causal Analysis* (New York: Wiley, 1973), 99.
37. Barnett, *Confronting the Costs of War*, 43; Jackman, *Power Without Force: The Political Capacity of Nation States.*

appropriate behavior from his military agent."[38] The theory explains the degree of authority that political leaders assign to their own armed forces in terms of the costs and benefits of delegation, the costs of monitoring military compliance with leaders' wishes, and the military's strategic capacity for circumventing or resisting leaders' decisions. As they decide how much responsibility to delegate to their own militaries as well as which mechanisms to use to monitor their forces, leaders confront several dilemmas. In particular, allowing for a high degree of military autonomy and responsibility may satisfy the military's preference to be left alone while also enhancing its capacity to disobey or even overthrow leaders.

While all civil-military relationships, even in countries whose regimes are highly legitimate, can be conceptualized through the lens of principal-agent theory, the literature on civil-military relations has shown that illegitimate leaders usually face particularly serious variants of the principal-agent dilemma. On the one hand, leaders of illegitimate regimes may be dependent on their own forces to maintain domestic order in fragile and highly divided societies, but on the other hand, the high risk of a coup means that over-reliance on the military can be dangerous. Indeed, when the risk of a coup is extremely high, leaders may protect themselves from the possibility of overthrow by undermining the effectiveness and professionalism of their own militaries.[39]

Illegitimate leaders tend to be willing to pay almost any price to avoid a coup including sabotaging their own military forces. For example, in 1970 and 1973 Syrian leaders kept their most powerful and loyal units in Damascus during battles against Jordan and Israel to ensure that no coup would take place during fighting.[40] Most illegitimate leaders are more concerned about conspiracy at home than victory abroad because coups are much more likely than wars to lead to bloody regime change.[41] During the 1950s and 1960s, for example, a

---

38. Peter D. Feaver, "Crisis as Friction: An Agency Theory Explanation of the Souring of American Civil-Military Relations" (paper prepared for "A Crisis in Civilian Control? Contending Theories of American Civil-Military Relations," a conference sponsored by the Olin Institute for Strategic Studies, 11–12 June 1996), 2. For other applications of principal-agent theory to civil-military relations, see Deborah Avant, *Political Institutions and Military Change: Lessons From Peripheral Wars* (Ithaca: Cornell University Press, 1994); Deborah Avant, "The Institutional Sources of Military Doctrine: Hegemons in Peripheral Wars," *International Studies Quarterly* 37, no. 4 (December 1993): 409–30; Peter D. Feaver, "The Civil-Military Problematique: Huntington, Janowitz, and the Question of Civilian Control," *Armed Forces and Society* 23, no. 2 (winter 1996): 149–78; Peter D. Feaver, "Crisis as Shirking: An Agency Theory Explanation of the Souring of American Civil-Military Relations," *Armed Forces and Society* 24, no. 3 (spring 1998): 407–34.

39. For a recent example, see James T. Quinlivan, "Coup-Proofing: Its Practice and Consequences in the Middle East," *International Security* 14, no. 2 (fall 1999): 131–65.

40. Patrick Seale, *Asad* (London: I. B. Tauris, 1988).

41. Jeffrey Herbst, "War and the State in Africa," *International Security* 14, no. 4 (spring 1990): 117–39.

coup or attempted coup occurred every four months in Latin America, every seven months in Asia, every three months in the Middle East, and every fifty-five days in Africa.[42] Although the numbers vary slightly depending on counting methods, there were approximately 357 attempted coups in the developing world from 1945 to 1985 and about half of all Third World states experienced a coup during this period. Of these attempts, 183 coups (or 51 percent) were successful and one-fifth to one-third of them involved substantial bloodshed including execution of members of the displaced old guard.[43] More recently, militaries staged thirty-six coup attempts between 1990 and 1992 and Huntington noted that there were twenty coups in the new democracies between 1990 and 1995. In short, coup-risk is a common and serious problem in illegitimate regimes.

As a result, and as predicted by principal-agent theory, illegitimate leaders often take steps to protect themselves from coups including random shuffling of officers, non-merit-based recruitment and promotion, and fragmentation of the military into rival factions that check and balance each other.[44] Illegitimate leaders often attempt to monopolize information by requiring officers to report directly to the capital and to bypass their own commanders. The creation of multiple forces with overlapping and ill-defined tasks often ensures that political leaders can pit branches of the armed forces against each other. All of these steps reduce the risk of a coup while diminishing the military's ability to adapt to conditions of stress.

For example, most illegitimate leaders who are vulnerable to a coup fragment their armed forces into rival organizations that check and balance each other and protect the regime as a result of reciprocal monitoring and suspicion. In 1837 in Chile, Diego Portales created a civilian militia of 25,000 men to serve as a counterweight against the regular army.[45] In Brazil in 1964, just a few months after taking power via a coup, the new regime created the Serviço Nacional de Informações and then "tried to use the resources of the SNI to

42. Gary K. Bertsch, Robert P. Clark and David M. Wood, *Comparing Political Systems: Power and Policy in Three Worlds* (New York: Wiley, 1978).

43. Ekkart Zimmermann, *Political Violence, Crises and Revolutions: Theories and Research* (Boston: G. K. Hall, 1983), 241; Steven R. David, *Defending Third World Regimes from Coups d'état* (Lanham: University Press of America, 1985); Steven R. David, *Third World Coups d'état and International Security* (Baltimore.: Johns Hopkins University Press, 1987); and Samuel E. Finer, "The Military and Politics in the Third World," in *The Third World,* ed. W. Scott Thompson (San Francisco: Institute for Contemporary Studies Press, 1983).

44. Peter D. Feaver, "Civilian Control in Small Democracies: The Contribution from Political Science" (paper prepared for the "Comparative Civil-Military Relations: Understanding Mechanisms of Civilian command in Small Democracies" conference, Center for Peace and Reconciliation, Arias Foundation for Peace and Human Progress, 1–3 August 1996).

45. Alain Rouquie, *The Military and the State in Latin America* (Berkeley and Los Angeles: University of California Press, 1987), 52.

gain control over the army.…"[46] In India, "a proliferation of state security and military agencies has…represented a tangible counterweight to the regular military forces."[47] In Kenya, President Jomo Kenyatta cultivated an eclectic mix of rival paramilitaries, militias, police units, and service branches after Kenya achieved independence in January, 1964. The consequent system of pitting rivals against each other deterred potential coup-plotters in any single organization.

These examples are not exceptions. When illegitimate leaders are vulnerable to a coup, they almost always divide their armed forces into rival organizations that check and balance each other. In a recent statistical study of almost every country in the world from 1966 to 1986, Author found that 91.8 percent of regimes that were vulnerable to a coup maintained highly divided militaries.[48] In the same study, Author found that regardless of the specification of the variables or the statistical technique used, and even after correcting for the nonindependence of the dependent variable over time, illegitimate regimes were at least 87.7 percent more likely to fragment their militaries than legitimate regimes that were not vulnerable to their own forces.

Fragmenting the military compromises fighting effectiveness and adaptability and increases the armed forces' vulnerability to aerial bombing. For example, fragmented militaries tend to lack the coordination necessary to use advanced technology, especially integrated air defenses. As Ben Meir notes, the technological complexity of modern warfare creates "an urgent need for interservice coordination at the highest military level."[49] In their analysis of Iraqi air defense during the Gulf War, Biddle and Zirkle show that Saddam Hussein refused to integrate multiple lines of command due to his fear of a coup even after it became clear that fragmentation entailed disastrous military consequences.[50] In addition, overlapping branches may pass responsibility for dangerous duty to other groups and, at the behest of civilian leaders, waste resources as a result of needless redundancy. The resulting fragmentation of the armed services can lead to disintegration of military units during bombing

---

46. Alfred Stepan, "The New Professionalism of Internal Warfare and Military Role Expansion," in *Armies and Politics in Latin America*, ed. Abraham F. Lowenthal and John Samuel Fitch (New York: Holmes & Meier, 1986), 41.

47. Migdal, *Strong Societies and Weak States*, 212.

48. By contrast, only 54.4 percent of regimes classified as not-at-risk of a coup pursued counterbalancing strategies. See Belkin, "Performing the National Security State."

49. Ben Meir, *Civil Military Relations in Israel* (New York: Columbia University Press, 1995), 78 n. 32; Biddle and Zirkle, "Technology, Civil-Military Relations, and Warfare in the Developing World," 4 n. 4; and Lewis Coser, *The Function of Social Conflict,* (New York: Free Press of Glencoe, 1956), 88 and 92.

50. Biddle and Zirkle, "Technology, Civil-Military Relations and Warfare in the Developing World."

campaigns and can leave civilian leaders with no other option than capitulation.

In addition to fragmenting the military, illegitimate leaders implement other coup-proofing strategies that make their militaries vulnerable to aerial bombing. When leaders undermine the morale of their own troops by purging, shuffling, imprisoning, torturing, or executing officers, they increase the likelihood that their forces will disintegrate during stressful campaigns. During the Iran-Iraq War, Saddam Hussein undermined his troops' morale by executing and incarcerating hundreds of officers including two of his most successful generals, Maher Abd al-Rashid and Hisham Sabah Fakhri, because he feared they "would develop a local or national following."[51] Stephen Hosmer and others have documented the sense of terror, helplessness and demoralization that bombing causes.[52] If morale is low and if enlisted personnel doubt the competence and integrity of their officers and the legitimacy of their political leaders, military cohesion is likely to disintegrate once bombing begins.

LEGITIMACY AND RALLIES-AROUND-THE-FLAG

A second reason why legitimate leaders may be more able to count on their own armed forces to respond effectively to aerial denial campaigns than illegitimate leaders is that militaries in high-legitimacy regimes are more likely than militaries in low-legitimacy regimes to rally around the flag during war. According to the ingroup-outgroup hypothesis, external threats to a group generate group cohesion and loyalty. The ingroup-outgroup hypothesis has been confirmed in numerous experimental settings[53] and is so well accepted that one scholar claimed it "to be a general law that human groups react to external pressure by increased internal coherence."[54] According to Bodin, "the best way of preserving a state, and guaranteeing it against sedition, rebellion and civil war is to…find an enemy against whom [the subjects] can make common

51. Ibid., 13.

52. Mueller, "Strategies of Coercion," 222.

53. Rupert Brown, *Group Processes: Dynamics Within and Between Groups* (Oxford: Blackwell, 1988); Arthur A. Stein, "Conflict and Cohesion," *Journal of Conflict Resolution* 20, no. 1 (March 1976): 143–72; Jack S. Levy, "The Diversionary Theory of War," in *Handbook of War Studies*, ed. Manus I. Midlarsky (Ann Arbor: University of Michigan Press, 1989).

54. Cited in Levy, "The Diversionary Theory of War," 261; Ralf Dahrendorf, *Class and Class Conflict in Industrialized Society* (Stanford: Stanford University Press, 1964), 58; George Simmel, *Conflict*, trans. Kurt H. Wolff (Glencoe: Free Press, 1956); Coser, *The Function of Social Conflict*; Brown, *Group Processes: Dynamics Within and Between Groups*; Stein, "Conflict and Cohesion."

cause."[55] Shakespeare advised statesmen that "Be it thy course to busy giddy minds/With foreign quarrels."[56]

It is important to note, however, that external conflict does not always lead to military cohesion.[57] Indeed, psychologists have demonstrated that the ingroup-outgroup hypothesis only applies if group members believe that coordinated action can overcome the threat.[58] This precondition is unlikely to apply to unprofessional militaries whose morale and cohesion have been undermined by political leaders who fear a coup. When leaders fragment their militaries into rival forces, shuffle and purge officers on a random and frequent basis, and adhere to non-merit based standards for promotion and recruitment, troops are likely to become cynical and doubt the military's ability to respond to attack as a unified and effective fighting force. As a result, aerial bombing is likely to cause militaries in low-legitimacy regimes to crumble and desert political leaders and to force them to capitulate to coercion while militaries in high-legitimacy regimes are more likely to rally around the flag and to remain loyal even as bombing continues.

For example, statistical data suggest that rallies-around-the-flag during wartime are more likely in high-legitimacy than in low-legitimacy regimes. In a study of 177 war-participating nations between 1815 and 1975, for example, Bueno de Mesquita et. al. found that regimes that were vulnerable to a coup were much more likely to experience a violent regime change as a result of participation in a war than regimes that were not vulnerable to a coup.[59] It is important to note that the authors did not distinguish between violent regime changes that were due to military conspiracies from those that resulted from popular revolutions. The presence or absence of a violent regime change also does not necessarily reveal whether the military rallied around the flag. At the same time, it is hard to imagine how a violent regime change could take place if the military engaged in a sustained rally in support of the regime, and the data seem to confirm our claim that wartime rallies are more likely in high-legitimacy than in low-legitimacy regimes. In addition, anecdotal evidence confirms the statistical data presented above and there are numerous examples—

55. Cited in Kenneth N. Waltz, *Man, The State and War* (New York: Columbia University Press, 1959), 81.

56. Cited in Jack S. Levy, "The Diversionary Theory of War," 259.

57. Arthur A. Stein, *The Nation at War* (Baltimore: Johns Hopkins University Press, 1978); Bruce Bueno de Mesquita, "Theories of International Conflict: An Analysis and An Appraisal," in *Handbook of Political Conflict: Theory and Research*, ed. Ted Robert Gurr (New York: Free Press, 1980), 361–98.

58. Stein, "Conflict and Cohesion," 145; Levy, "The Diversionary Theory of War," 261.

59. Bruce Bueno de Mesquita, Randolph M. Siverson, and Gary Woller, "War and the Fate of Regimes: A Comparative Analysis," *American Political Science Review* 86, no. 3 (September 1992): 644.

such as collapse of the South Vietnamese army during the Vietnam war—of militaries that failed to rally around low-legitimacy regimes during wartime.[60]

Below we examine our argument in the context of two case studies of attempted aerial coercion: the 1991 Gulf War between Iraqi and U.S.-led coalition forces, and the 1940 Battle of Britain between Germany and the United Kingdom. Despite some important differences between the two cases, our argument is that the political legitimacy of the target state was an important factor for explaining the outcome of both conflicts.

Our case selection is based on three factors. First, our cases are derived from the universe of large-scale aerial denial campaigns, thereby eliminating small hit-and-run aerial attacks. Second, we chose cases that exhibited variation on the independent and dependent variables. The Battle of Britain is categorized as a *high-legitimacy* case and as a coercive *failure,* while the Gulf War is categorized as a *low-legitimacy* case and a coercive *success.* Third, we chose difficult cases in which outcomes were unexpected. Germany entered the Battle of Britain in a much stronger position than the U.K., and in the Gulf War, Iraq was not expected to collapse so quickly.[61] Hindsight knowledge of the outcomes may make it appear as though cases were selected to provide easy tests of the theory. In fact, however, neither outcome was expected ex ante.[62] That

60. George C. Herring, *America's longest war: the United States and Vietnam, 1950–1975* (New York : Wiley, 1979).

61. British capitulation was quite possible. The British had just experienced a resounding defeat against the Luftwaffe in France in which they lost 453 aircraft and 362 pilots. Furthermore, the British had no allies to aid in their defense since the United States had not yet entered the war. In July 1940 the RAF had only 644 fighters to defend against Luftwaffe forces of nearly 2,600 aircraft. Far more pressing was the critical lack of fighter pilots. At the peak of the Battle of Britain in late August, the RAF was 211 pilots under establishment strength and unable to replace men lost in battle. As the Air Historical Branch's Official Narrative states: "Fighter Command, for its part, had lost pilots it could ill-afford; and the grim prospect of the fighter force slowly wasting away through lack of pilots was already apparent after little more than one week's intensive fighting." Under these circumstances, it should be of little surprise that the option to sue for peace was seriously considered. For example, on 18 June 1940, Foreign Secretary Lord Halifax asked the cabinet to consider suing for peace. Furthermore, the option to sue for peace was endorsed by such British notables as historian Basil Liddell Hart, "Rab Butler of the Foreign Office, socialist Charles Roden Buxton, First World Wwar leader David Lloyd George, and around thirty Members of Parliament. In short, capitulation to German demands to exit the war was a viable, and considered, option for the British. See Derek Wood and Derek Dempster, *The Narrow Margin* (New York: McGraw-Hill, 1961); John Terraine, *The Right of the Line: The Royal Air Force in the European War 1939–1945* (London: Hodder and Stoughton, 1985), 219; Richard Overy, *The Battle of Britain: The Myth and Reality* (New York: Norton, 2001); and Richard Hough and Denis Richards, *The Battle of Britain: The Jubilee History* (London: Hodder & Stoughton, 1993), 222.

62. Prior to the start of the Gulf War, the Iraqi military seemed to present a formidable foe to Coalition forces. It was estimated Iraq had around 540,00 troops in Kuwait, along with an impressive array of military hardware, all backed by a sophisticated air defense system. Furthermore, Hussein had promised the "mother of all battles," believing that the American public would withdraw their support for the war if it produced high casualties. As

having been said, because this is a preliminary analysis based on comparative case studies, our findings are only suggestive of our argument. Additional support for the theory would require quantitative analysis of the relationship between regime legitimacy, civil-military relations, and the outcome of denial bombing campaigns.

## THE GULF WAR

ON 2 AUGUST 1990, Iraqi forces invaded Kuwait following Saddam Hussein's claim that Kuwaiti territory rightfully belonged to Iraq. After international condemnation and economic sanctions failed to dislodge Iraqi forces from Kuwait, a U.S.-led coalition force began an air campaign to coerce Iraq into withdrawing. Following a six-week air campaign and a four-day ground offensive, Coalition forces freed Kuwait from occupying Iraqi troops on 28 February 1991. Our argument is that the domestic illegitimacy of the Iraqi regime helps to explain why Coalition aerial bombing was an important (although not quite sufficient) strategy for coercing Iraq into leaving Kuwait.

### DENIAL BOMBING DURING THE GULF WAR

The Coalition's air campaign was consistent with the key aspects of denial. As Pape notes, "Using air power for denial entails smashing enemy military forces, weakening them to the point where friendly ground forces can seize disputed territories without suffering unacceptable losses."[63] The United States was well aware of the political context in which the Gulf War was fought. A high casualty rate of Coalition troops would most likely have lead to domestic opposition to the war in the United States. Conversely, Saddam Hussein attempted to lure the Coalition into a bloody land battle to create opposition to the war in Coalition countries. The Coalition, consequently, attempted to destroy the Iraqi military through heavy air attacks.[64] The first phase of the air campaign

---

a result, senior commanders did not expect a walkover. For Iraqi troop estimates, see Lawrence Freedman and Efraim Karsh, *The Gulf Conflict, 1990–1991: Diplomacy and War in the New World Order* (London: Faber and Faber 1993), 390; John Mueller, "The Perfect Enemy: Assessing the Gulf War," *Security Studies,* 5, no.1 (autumn 1995): 80. For estimates of military hardware numbers, see Eliot Cohen, *Gulf War Air Power Survey* [also referred to as *GWAPS*] (Washington, D.C.: U.S. Government Printing Office [GPO], 1993), vol. 4, pt. 1, 1.

    63. Pape, *Bombing to Win,* 69.

    64. One colleague suggested to us that while the evidence is ambiguous, a strong case can be made that "the U.S. did not intend to coerce Iraq via airpower, that the U.S. was not willing to take 'yes' for an answer, and that although Iraq was willing to make a number of concessions, the U.S. kept raising the bar." While our reading of the memoirs of President Bush

targeted Iraqi command and control, aircraft and antiaircraft missile sites, and chemical, nuclear, and biological weapons facilities. The second phase targeted ammunition dumps, oil refineries, electrical power plants, and transportation links to Kuwait. The final phase of the air campaign targeted Iraqi ground forces. General Colin Powell remarked about the Coalition air campaign that "Our strategy for dealing with this [Iraqi] army is very, very simple. First we're going to cut it off, then we're going to kill it."[65]

The Coalition achieved air supremacy over Iraq and Kuwait during the early days of the war by focusing on the destruction of Iraqi radar and air-defense systems, command centers and airfields, and fighter planes. The Coalition managed to decimate the Iraqi air force: 290 of 724 Iraqi aircraft were destroyed, 121 aircraft fled to Iran, and only 43% of the Iraqi air force remained intact at the end of the war.[66] During the early phases of the war, Coalition air strikes destroyed 95 percent of Iraqi air defense systems and 61 out of 66 Iraqi airfields.[67] The demolition of Iraqi air defenses allowed Coalition leaders a considerable degree of freedom in their choice of targets.

Coalition bombs destroyed supply lines that supported forward-deployed Iraqi troops and air strikes against bridges, railroads and convoys strangled the Iraqi military. "It is estimated that attacks on the LOC [Lines of Communication] targets reduced the carrying capacity of traffic on the Baghdad-to-KTO [Kuwaiti Theater of Operations] highways from about 200,000 metric tons per day to about one-tenth that amount by the end of the war."[68] Front-line Iraqi troops experienced serious food, water and supply shortages that undermined their ability to hold Kuwait. In addition, the Coalition targeted Iraqi infrastructure and bombing destroyed Iraq's electrical supplies, water treatment plants, and fuel supply. Over 80 percent of Iraqi oil refineries were damaged, and the national power grid collapsed, thus undermining Iraq's prospects of waging a prolonged war.[69] The majority of Coalition air strikes (over 37,500 sorties) targeted Iraqi ground forces in Kuwait. The air campaign destroyed about half of Iraqi armored weaponry in Kuwait and although the precise number of Iraqi causalities that resulted from air strikes is unknown, Coalition pilots reported a

---

and his key advisors is that U.S. decision makers did attempt to use aerial denial to coerce Iraq into leaving Kuwait, agreement over the interpretation of American intent is not essential for our argument. More important than whether or not U.S. leaders *intended* to use aerial denial for coercive purposes is whether Iraq's withdrawal from Kuwait was the result or partial result of aerial denial.

65. *International Herald Tribune*, 24 January 1991.

66. Freedman and Karsh, *The Gulf Conflict 1990–1991* .

67. Jeffrey McCausland, *The Gulf Conflict: A Military Analysis* (London: Brassey's, for the International Institute for Strategic Studies, 1993), 28–29.

68. Freedman and Karsh, *The Gulf Conflict 1990–1991*.

69. Ibid., 321.

high success rate of hitting their targets. Twenty-one of Iraq's forty divisions in Kuwait were destroyed.[70]

DENIAL WAS AN IMPORTANT ELEMENT OF COERCIVE SUCCESS

Since the end of the Gulf War, scholars have debated whether aerial denial was successful at coercing Iraq to withdraw from Kuwait. On one hand, some scholars contend that the air campaign neutralized Iraqi forces before the beginning of the ground war.[71] Others argue that the air campaign did not neutralize Iraqi forces, that Iraqi forces would have remained in Kuwait if the Coalition had not launched a four-day ground war, and that other factors account for the one-sided outcome in the Gulf.[72] In addition, they claim that the United States did not intend to use air power to coerce Iraq. One colleague suggested to us that while the evidence is ambiguous, a strong case can be made

70. Ibid., 401.

71. For some of the most complete and detailed studies taking the viewpoint that airpower was decisive in the Gulf War, see Cohen, *Gulf War Air Power Survey* [GWAPS], vols. 1–5 plus *Summary Report.*.See esp. *GWAPS Summary Report,* 116–17; *GWAPS,* vol. 2, pt. 2, 107; James A. Winnefeld, Preston Niblack, and Dana J. Johnson, *A League of Airmen: U.S. Air Power in the Gulf War* (Santa Monica, Calif.: RAND, 1994), 5, 285, 287; Thomas A. Keaney, "The Linkage of Air and Ground Power in the Future of Conflict," *International Security* 22, no. 2 (fall 1997): 147; Michael R. Gordon and Bernard E. Trainor, *The Generals' War: The Inside Story of the Conflict in the Gulf* (Boston: Little, Brown, 1995), 474; Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War* (Boston: Houghton Mifflin, 1993), 495; Stephen T. Hosmer, *Psychological Effects of U.S. Air Operations in Four Wars: 1941–1991: Lessons for U.S. Commanders* (Santa Monica, Calif.: RAND, 1996); Pape, "The Limits of Precision-Guided Air Power"; Pape, "The Air Force Strikes Back"; Aharon Levran, *Israeli Strategy After Desert Storm: Lessons of the Second Gulf War* (London: Frank Cass, 1997), 29.

72. These factors include the importance of the ground campaign, the shortcomings of the Iraqi military in terms of morale, training, tactics, and leadership, or numerical inferiority in the Kuwaiti Theater of Operations (KTO). For research arguing for the importance of the ground war, see Stephen Biddle, "Victory Misunderstood: What the Gulf War Tells Us about the Future of Conflict," *International Security* 22, no.2 (fall 1996): 139–79; Stephen Biddle, "The Gulf War Debate Redux," *International Security* 22, no. 2 (fall 1997): 163–74; Daryl Press, "Lessons from Ground Combat in the Gulf: The Impact of Training and Technology," *International Security* 22, no. 2 (fall 1997): 137–46. A number of U.S. Army sponsored accounts also exist. For example, see Robert H. Scales, *Certain Victory: The U.S. Army in the Gulf War* (Washington, D.C.: Brassey's, 1997); Frank N. Schubert and Theresa L Kraus, eds., *The Whirlwind War: The United States Army in Operations Desert Shield and Desert Storm* (Washington, D.C.: Center for Military History, 1995); Richard M. Swain, *"Lucky War": Third Army in Desert Storm* (Fort Leavenworth, Kansas.: U.S. Army Command and General Staff College Press, 1997). For other explanations, see John Mueller, "The Perfect Enemy: Assessing the Gulf War," *Security Studies* 5, no. 1 (autumn 1995): 77–117; Gregg Easterbrook, "Operation Desert Shill: A Sober Look at What Was Not Achieved in the War," *New Republic,* 30 September 1991, 32ff; Michael J. Mazarr, Don M. Snider, and James A. Blackwell Jr., *Desert Storm: The Gulf War and What We Learned* (Boulder: Westview, 1993), 113–17, and 177–78. Also emphasized in the literature has been superior Coalition training and decision making, though such arguments have received less attention. See, for example, Freedman and Karsh, *The Gulf Conflict, 1990–1991,* 437; Norman Friedman, *Desert Victory: The War for Kuwait* (Annapolis: Naval Institute Press, 1991), 235, 246, 252–53.

that "the U.S. did not intend to coerce Iraq via airpower, that the U.S. was not willing to take 'yes' for an answer, and that although Iraq was willing to make a number of concessions, the United States kept raising the bar."

While we acknowledge the quality of evidence on both sides of the debate, we conceptualize the Gulf War as a case of successful aerial coercion for the following reasons. First, Saddam Hussein made a series of concessions that culminated in an offer to withdraw completely from Kuwait on February 23rd, prior to the commencement of the ground war.[73] Although the U.S.-led coalition rejected that offer because Iraq was unwilling to leave its military equipment behind in Kuwait, clearly the air war was one of the factors that convinced Hussein to offer to withdraw. Even if the Coalition did not intend to use aerial denial for coercive purposes (and the evidence in the memoirs of President Bush and his key advisors certainly is mixed on this point) it seems clear that one *effect*—or, at the very least, partial effect—of aerial denial was to prompt Iraq to offer to withdraw.

Second, recall that our argument is that Coalition aerial bombing was an important although not quite sufficient strategy for coercing Iraq into leaving Kuwait. Even Daryl Press, one of the most vocal critics of the impact of air power in the Gulf War, concedes that the air campaign did considerable damage to Iraqi military targets. Whether aerial denial was either moderately or almost completely responsible for coercing Iraq to withdraw from Kuwait is not critical for our argument. More important for the sake of our argument is whether the impact that aerial denial *did* have (again, regardless of whether it was partially or fully sufficient for coercing withdrawal) was a function of the illegitimacy of the Iraqi regime. Finally, some of the arguments that scholars have raised to show that aerial denial did not play an important role seem questionable.[74]

73. Pape, *Bombing to Win.*
74. For example, Press argues that Coalition air strikes did not destroy Iraqi C3I. His evidence for the existence of adequate Iraqi C3I is based largely on the Iraqi response to the "left hook" strategy carried out by the U.S. Army as it advanced into Kuwait. Press argues that enough C3I capability existed for Iraqi commanders to identify the Coalition maneuver, formulate a response, and move armored divisions into a blocking position. See Daryl Press, "Desert Mirage: Air Power, the Gulf War, and the Future of Warfare" (forthcoming), 30–32. This is a contentious point. Iraq may have been able to respond to the left hook simply by watching Western news as the likelihood of a Coalition sweep around the left flank of the Iraqi forces was a much discussed topic in the weeks before the war. Schwarzkopf himself complained that *Newsweek* had printed the entire Coalition battle plan. With this in mind, Iraqi movements toward the penetrating Coalition forces may have been little more than an educated guess, rather than evidence for undamaged C3I capabilities. In addition, there is much evidence to suggest that Iraq had little in C3I capability at the beginning of the war. Indeed, as we argue later in the text, Hussein's lack of legitimacy and fear of a coup seems to help explain the weaknesses in Iraqi C3I. See for example, Easterbrook, "Operation Desert Shill: A Sober Look at What Was Not Achieved in the War"; Roger Cohen and Claudio

To the extent that the air campaign coerced Iraq to withdraw from Kuwait, we argue that the domestic illegitimacy of the Iraqi regime helps explain the impact of aerial denial. Of course, the vast difference between Coalition and Iraqi military strength was an important precondition for the outcome of the battle, but the difference itself was a partial result of the illegitimacy of the Iraqi regime. We begin by arguing that the Iraqi regime was illegitimate and claim that domestic illegitimacy caused Saddam Hussein to arrange his relationship with the Iraqi military in ways that led his armed forces to crumble once the bombing started. We conclude that Iraqi forces would have been less likely to crumble as a result of aerial bombing if the Hussein regime had been more legitimate.

SADDAM HUSSEIN'S LEGITIMACY DEFICIT

Saddam Hussein's government clearly lacked legitimacy at the outset of the Gulf War, as the regime rested on a foundation of fear and terror rather than popular consent. Hussein consolidated his power after becoming president in 1979 by purging the government of all potential challengers.[75] Starting with those outside Hussein's Ba'ath party, the purges later came to include party members. In one carefully orchestrated purge, key figures in both the military and the Ba'ath Party "confessed" to crimes against the state and between 500 and 1,000 officials were executed over the course of several days.[76] Hussein also developed a menacing network of secret police organizations to monitor all aspects of Iraqi society, including the military. Three independent, mutually suspicious secret police organizations reported to Hussein. These organizations included the *Amn* (State Internal Security Agency), the *Estikhbarat* (Military Intelligence), and *Mukhbarat* (Party Intelligence), all of which watched over each other as well as the activities of state and civil institutions including the army, administrative departments and citizen clubs. As a result, Hussein's Iraq has been characterized by fear and insecurity that grips members of the public and the state.[77]

---

Gatti, *In the Eye of the Storm* (New York: Farrar, Straus, and Giroux, 1991), 288; Mueller, "The Perfect Enemy: Assessing the Gulf War," 98–99; Freedman and Karsh, The *Gulf Conflict: 1990–1991,* 387; Trevor N. Dupuy, *How to Defeat Saddam Hussein: Scenarios and Strategies for the Gulf War* (New York: Warner Books, 1991); H. Norman Schwarzkopf, *It Doesn't Take a Hero* (New York: Bantam, 1992), 440.

75. Samir al-Khalil, *Republic of Fear: The Politics of Modern Iraq* (Berkeley and Los Angeles: University of California Press, 1990), 25.

76. Adel Darwish and Gregory Alexander, *Unholy Babylon: The Secret History of Saddam's War* (New York: St. Martin's, 1991), 210; Samir al-Khalil, *Republic of Fear*, 25.

77. Samir al-Khalil, *Republic of Fear*, 13 and 16.

The illegitimacy of the Iraqi regime was also apparent from the personality cult that Hussein created. He proclaimed his own birthday a national holiday, adorned numerous buildings with his poster, renamed many important institutions in his own honor and fabricated his family tree to show direct lineage from the Prophet Muhhamed.[78] These moves were not simply the whims of an egotistical leader. Rather, they were deliberate attempts to cloak the regime under the guise of legitimacy by portraying Hussein as an ancient warrior, modern nationalist, and pan-Arab and Islamic conqueror.[79]

Hussein's legitimacy deficit caused him to be quite vulnerable to his own armed forces. Given his treatment of domestic opponents, it is quite likely that any successful coup would have been bloody, as Iraq's recent history is littered with repeated, violent civil-military confrontations. [80] In 1958, for example, General Abd-al Karim Qassem and a group of 200 "Free Officers" overthrew the monarchy and assassinated King Faisal II, resulting in Qassem's appointment as both prime minister and commander in chief.[81] Five years later, Qassem himself was deposed in a Ba'thist coup, and the first Ba'thi regime was installed. When supporters of Qassem refused to believe that he had been overthrown, the coup-plotters propped his body on a chair for display on Iraqi television for several days.

### THE IRAQI LEGITIMACY DEFICIT AND THE SUCCESS OF AERIAL DENIAL

Subordination of the armed forces was such a high priority that Hussein implemented many coup-proofing strategies even when those strategies undermined the military's combat effectiveness and increased its vulnerability to denial bombing. For example, Hussein created a centralized command and control system to ensure personal supervision over military decisions. In order to prevent various units and branches of the armed forces from conspiring against the regime, Hussein required all senior officers to report directly to him and to avoid interservice coordination as well as contact with foreign technicians.[82]

Hussein also undermined his military by distorting military advancements through a system of politicized appointments and frequent rotation of officers.

---

78. Simon Henderson, *Instant Empire: Saddam Hussein's Ambition for Iraq* (San Francisco: Mercury House, 1991), 78; Miron Rezun, *Saddam Hussein's Gulf Wars: Ambivalent Stakes in the Middle East* (Westport: Praeger, 1992), 20.

79. Rezun, *Saddam Hussein's Gulf Wars,* 215.

80. See Samir al-Khalil, *Republic of Fear*, for a discussion of the turbulent and violent political history of Iraq.

81. Ibid., xiii.

82. Quinlivan, "Coup-Proofing: Its Practice and Consequences in the Middle East."

As Cordesman argues, Hussein rotated commanders to ensure that no group of military or internal security forces would become loyal to a potential rival.[83] Appointments to key positions within the Iraqi military were based upon "the twin principles of personal fealty and blood ties to Saddam."[84] The lack of merit-based promotion inhibited competent leadership from rising to the top of the military hierarchy and Hussein often rewarded distinguished service with demotion, imprisonment or execution to prevent officers from becoming too powerful. For example, shortly before the Iraqi invasion of Kuwait, Hussein imprisoned or executed eighteen generals.

All of these tactics successfully protected Hussein from his own armed forces before, during, and after the Gulf War. At the same time that they reduced the risk of a conspiracy, however, Hussein's coup-proofing strategies made his forces highly vulnerable to the Coalition's air war. For example, Hussein had built Iraqi air defense command-and-control centers above ground to allow the Republican Guard to counter possible coup threats from the Air Force.[85] As a result, command centers were enormously vulnerable to precision air strikes. To take another example, the extreme centralization of the Iraqi system obstructed coordination of various branches of the armed forces and prevented the rapid assimilation of information and dissemination of orders. Coalition field commanders coordinated their land, sea, and air forces simultaneously, thus allowing them freedom to respond to rapidly changing battlefield conditions. By contrast, the Iraqi system did not allow for such flexibility because Hussein insisted on authorizing even low-level strategic decisions; this lack of coordination and flexibility undermined Iraqi air defense.[86]

Partially as a result of its limited training with foreign specialists, the Iraqi military had difficulty utilizing available technology. Nowhere was the lack of training more apparent than in the poor combat skill of Iraqi fighter pilots, who were reluctant to engage Coalition aircraft and either fired weapons well out of range of Coalition aircraft or did not fire their weapons at all.[87] Although most Iraqi military equipment was of Soviet origin, very few Soviet ad-

---

83. Anthony Cordesman, *Iran and Iraq: The Threat from the Northern Gulf* (Boulder: Westview, 1994), 121.

84. Biddle and Zirkle, "Technology, Civil Military Relations and Warfare in the Developing World," 14.

85. A number of scholars have made this claim. See for example, Norman Friedman, *Desert Victory*, 158–59 n. 6; Stephen Biddle and Robert Zirkle, "Technology, Civil-Military Relations, and Warfare in the Developing World," 21 n. 71.

86. Ibid.; and Easterbrook, "Operation Desert Shill," 32*; International Defense Review*, "Ground-Launched Decoys Spearheaded Gulf War Attack," 11 (1992), 1057.

87. James Blackwell, *Thunder in the Desert: The Strategy and Tactics of the Persian Gulf* (New York: Bantam, 1991), 135.

visors were deployed in Iraq.[88] As a result, Iraqi personnel had limited opportunities to learn about the tactics, operation, and maintenance of the MiG-29 fighter plane. Iraqi pilots rarely practiced night flying and had little knowledge of aerial combat beyond unopposed runs at civilian targets. In the majority of confrontations, Iraqi pilots disengaged before any air-to-air combat occurred. Indeed, many Iraqi pilots were shot down as they attempted to escape, without firing any shots of their own.[89] Related to these concerns, lack of contact with foreign specialists undermined Iraqi ability to utilize other facets of its air defenses, such as the Roland missile that was designed in France. Although the inept performance of air defense was due to several factors, experts believe that their isolation from foreign advisors was a major reason for insufficient combat preparation.[90]

Coalition bombing triggered high rates of desertion and surrender throughout the Iraqi armed forces. Approximately 65,000 Iraqi troops surrendered and those who did not desert their posts offered little or no resistance. According to estimates based on reports from Iraqi prisoners of war, Iraqi army units suffered desertion rates ranging from 20-50 percent before the beginning of the ground war of 24 February, and even the "loyal" elite Republican Guard suffered mass desertions of up to 50 percent.[91] Such high rates of desertion are surprising given the difficulty of flight from the front lines: the majority of Iraqi soldiers were more than 100 miles into unfamiliar Kuwaiti territory and believed that there were mine fields behind their lines.[92] Reports of desertions surfaced as early as August 1990 and the problem was so serious that in October the Iraqi General Staff ordered the formation of execution squads in each unit.[93] Although precise figures are not available, between 100,000 and 200,000 Iraqi soldiers probably deserted their posts.[94] The Iraqi military allowed one

88. Hussein feared that exposing his officers to foreign personnel could increase the risk of subversion, possibly by exposing them to revolutionary ideas, possibly by whetting their appetites for higher living standards. Biddle and Zirkle, "Technology, Civil-Military Relations, and Warfare in the Developing World," 20; Rajan Menon, *Soviet Power and the Third World* (New Haven: Yale University Press, 1986), 192–93.

89. Murray Hammick, "Aerial Views: USAF Air-to-Air Combat," *International Defense Review* 7 (May 1991): 473. Low Iraqi morale was not a uniform condition, and was far more evident in the Iraqi front-line infantry than in the Republican Guard for example. However, this is unsurprising since the Republican Guard were recruited specifically on the basis of their loyalty, and thus supports the argument we are making.

90. Biddle and Zirkle, "Technology, Civil-Military Relations and Warfare in the Developing World"; Norman Friedman, *Desert Victory,* 162.

91. *Washington Post*, 17 March 1991.

92. Mueller, "The Perfect Enemy: Assessing the Gulf War," 83; Freedman and Karsh, *The Gulf Conflict 1990–1991*, 390; Norman Friedman, *Desert Victory*, 408.

93. *GWAPS*, 78.

94. *Los Angeles Times*, 17 March 1991; Bob Woodward, "100,000 Iraqi Troops May Have Deserted," *Washington Post*, 17 March 1991, A24.

week of home leave after four weeks of service at the front, and morale was so low that a significant proportion of those who took leave did not return.[95]

Extremely high rates of desertion and surrender were a partial result of the Coalition's military superiority. Also important, however, was the fact that Iraqi forces were demoralized even before the invasion of Kuwait as a result of the regime's lack of legitimacy and the pathologies that Hussein built into the structure of Iraqi civil-military relations.[96] Many of those captured or surrendered chanted and sang the praises of General Schwarzkopf as they were driven away to detention areas for debriefing. Indeed, Schwarzkopf himself acknowledged that most Iraqi soldiers did not want to be in Kuwait, that they were "kept there at the point of a gun."[97] The Coalition's aerial denial campaign thus compounded problems of low morale that were already present in the Iraqi public and military.[98] Mueller agrees that while the credit for cracking Iraqi morale has commonly been given to American military superiority, "it seems more likely that the Iraqi will to fight, if any, had been substantially broken before a shot was fired or a bomb dropped."[99] Reporters who spent time in Iraq both before and during the war, such as John Simpson of the BBC, were convinced that "the population of Iraq as a whole had no interest in Saddam's holy war and simply wanted to be left alone to get on with their lives in peace."[100] Simpson's research led him to the conclusion that most people "hated the system in Iraq and the man who had created it, how wrong they felt the invasion of Kuwait had been, and how crazy they thought the decision to oppose the West was." Despite almost five months in Baghdad, Simpson comments that "not a single Iraqi had defended Saddam Hussein to me in private, with the exception of two or three ministers and officials whose fate was closely bound up with Saddam's own." In short, Hussein took "an almost entirely unwilling country to war."[101] From a military viewpoint, debriefed Iraqi prisoners of war felt that while it was worth occupying Kuwait, it was not

95. Secretary of State for Defense, *Statement on the Defense Estimates: Britain's Defense for the 90s* (London: HMSO, 1991), 23.

96. Much of the research regarding the causes of success of the Coalition's strategic bombing campaign, and subsequent land war has ignored the role of Iraqi morale. One exception to this is John Mueller's analysis in "The Perfect Enemy: Assessing the Gulf War." Mueller's argument, however, does not link the weakness of Iraqi morale to the lack of legitimacy in Hussein's regime, as is our contention here.

97. Schwarzkopf cited in Easterbrook, "Operation Desert Shill." Schwarzkopf's statement is no exaggeration. Iraqi forces involved in the battle at Khafji claimed they had advanced on Coalition forces only at the point of their officers' guns. See Friedman, *Desert Victory*, 200.

98. *Boston Globe*, 28 February 1991.

99. Mueller, "The Perfect Enemy: Assessing the Gulf War," 108.

100. John Simpson, *From the House of War: John Simpson in the Gulf* (London: Hutchinson, 1991), 182.

101. Ibid., 182, 210, 267, 270.

worth fighting for, and Hussein would find a way to pull out and save face if Coalition forces were serious about war. Unsurprisingly, many troops became "plagued by a sense of defeatism as soon as the bombardment began."[102] One of the most important factors favoring the Coalition forces was that the Iraqi people, including civilians and members of the military, did not support the regime or the war.[103]

Alternative explanations for the ease of the Coalition victory have focused on the poor preparation of the Iraqi military, the Iraqis' lack of skilled leadership and the overwhelming superiority of the Coalition forces. All of these factors were important, but we argue that all of them were a partial result of the Hussein regime's legitimacy deficit. Superiority is a relative term and even though some of the Coalition's superiority resulted from the size and quality of its forces, another part derived from the structural weaknesses of the Iraqi forces that in turn reflected Hussein's legitimacy deficit. If Hussein's regime had been built on a foundation of political legitimacy, his military would have been much less vulnerable to the Coalition's aerial bombing campaign and subsequent ground war.

THE BATTLE OF BRITAIN

FROM 10 JULY to 31 October 1940, Nazi Germany engaged in an intense aerial bombing campaign designed to coerce Britain to withdraw from the Second World War. Despite heavy losses that pushed the Royal Air Force (RAF) to the brink of collapse, the British refused to capitulate. By September 15th, Hitler concluded that the Luftwaffe had failed to achieve air superiority over the RAF and he delayed a proposed crosschannel invasion - Operation Sealion. On October 12th, with the Luftwaffe suffering greater losses against a reinvigorated RAF, Hitler decided to postpone Operation Sealion indefinitely. We argue that Germany's failure to coerce the British through aerial denial was a partial result of high British domestic legitimacy. The government's domestic legitimacy and the absence of an internal threat allowed the British to structure the military and conduct military operations with the utmost attention toward defense, adaptability, and strategic effectiveness, and to enlist loyal civilians into the war effort. While there was no deterministic connection between legitimacy and the outcome of the battle, few of the decisive factors that resulted in British victory would have been possible if the government had not been

102. Bob Woodward, "100,000 Iraqi Troops may Have Deserted."
103. Easterbrook, "Operation Desert Shill,"

legitimate. German denial bombing was unable to expose fatal military flaws often found in less legitimate regimes, and in a battle that was won by a "narrow margin," the legitimacy of the British system made victory possible.[104]

### DENIAL BOMBING DURING THE BATTLE OF BRITAIN

The Luftwaffe engaged in an extended denial bombing campaign during most of the Battle of Britain. German bombing was not originally intended to foreshadow an invasion of Britain. The relative weakness of the German Navy vis-à-vis the Royal Navy prevented a German crosschannel invasion immediately after the fall of France. Rather, Hitler hoped to force Britain to sue for peace, thus allowing Germany to turn its attention eastward to an invasion of the USSR.[105] The Luftwaffe sought air superiority over the RAF so that it could use dive-bombing to cripple the Royal Navy without interference from Fighter or Coastal Command. Consequently, the German high command sought to diminish the strength of the RAF by targeting strategic sites such as airfields and airplane factories, and by engaging Fighter Command in an extended battle of attrition. Given the weakness of the RAF after heavy losses in France, the German high command was convinced of its ability to defeat Fighter Command quickly and, if necessary, to launch a crosschannel invasion. During the course of the battle, the Germans destroyed 1,017 British planes, killed 537 pilots, and dropped more than 60,000 tons of bombs on strategic targets in Britain.[106]

August was the critical month for Britain as intense Luftwaffe bombing rapidly decreased the strength of Fighter Command. During this time, Fighter Command experienced a critical shortage of pilots and approached the brink of collapse.[107] An important shift in German policy occurred on August 24th,

104. See G. Quester, *Deterrence Before Hiroshima* (New Brunswick: Transaction Books, 1986). For previous important analysis of the battle, see Basil Collier, *The Battle of Britain* (New York: MacMillan, 1962); Angus Calder, *The Myth of the Blitz* (London: Jonathan Cape, 1991); Richard Collier, *Eagle Day: The Battle of Britain* (New York: Dutton, 1966); Henry Liddell Hart, *The History of the Second World War* (London: Cassell, 1970); Alexander McKee, *Strike From the Sky: The Story of the Battle of Britain* (London: Grafton, 1990); Richard Overy, *The Battle of Britain: The Myth and Reality* (New York: Norton, 2001); Robert Wright, *Dowding and the Battle of Britain* (London: Macdonald, 1969).

105 See for example, Christopher Ray, "1940–1941: Britain's Finest Hour or Hitler's Greatest Hoax?" *History Review* 27 (March 1997): pp. #; Peter Calvocoressi, Guy Wint, J ohn Pritchard, *Total War* (London: Penguin, 1989), 151; Gordon Wright, *The Ordeal of Total War* (New York: Harper Row, 1968), 29; Overy, *The Battle of Britain*, chap. 1.

106. The figure for the tonnage of bombs dropped is an estimate. Figures are from Derek Wood and Derek Dempster, *The Narrow Margin* (New York: McGraw-Hill, 1961), 481; and John Terraine, *The Right of the Line: The Royal Air Force in the European War 1939–1945* (London: Hodder and Stoughton, 1985), 219.

107. Wood and Dempster, *The Narrow Margin,* Appendix 10, 470; Collier, *The Battle of Britain*; Overy, *The Battle of Britain*; Wright, *Dowding and the Battle of Britain.*

when the Luftwaffe switched from daylight raids on airfields and radar installations to night bombing within populated districts.It is important to note, however, that denial bombing remained an essential component of German strategy as the Luftwaffe attempted to target strategic sites within populated districts rather than to focus solely on bombing civilians. Hence, it is incorrect to characterize the German strategy during the second half of the battle as punishment - and not denial. Rather, German strategy shifted from pure denial to denial plus punishment.[108]

What the shift in German strategy did provide Fighter Command was a much-needed break that, as the move from a strict denial campaign to a mixture of denial and punishment, allowed the British to make a remarkable recovery in aircraft production and pilot training. By mid-September, the Luftwaffe began to experience greater losses while the British showed no signs of imminent collapse. On 12 October Hitler concluded that a crosschannel invasion was unfeasible given the persistent strength of Fighter Command and decided to postpone Operation Sealion indefinitely.[109] While we agree with the scholarly consensus that the German shift from strict denial to a mixed strategy was critical to British success, we argue that the high level of British legitimacy kept Fighter Command from failing in those fateful days in August before the shift in German policy. In other words, given Britain's critical shortage of pilots and materials, it is probable that a less legitimate regime would have been coerced.

THE LEGITIMACY OF THE BRITISH SYSTEM

There is little question that the British government was highly legitimate well before the start of the Second World War. Perhaps due to its isolation and early industrialization, Britain was able to develop liberal institutions relatively early in its history. Despite the fact that Britain has no formal written constitution, numerous acts and statues such as the Bill of Rights of 1689, the Act of Settlement of 1701, and the Parliament Act of 1911 limited the power of the monarchy and the aristocracy and established a flexible separation of powers

---

108. Sallagar argues that the attacks on military targets after 24 August were accidental in that the only military sites that were hit after late August were located in close proximity to actual German targets, the civilian populations of London and other British cities. If correct, German strategy during the second half of the Battle of Britain might more accurately be characterized as pure punishment, not denial-plus-punishment as we argue. This is irrelevant to our argument because our focus is whether or not British legitimacy can help explain the failure of German aerial denial *before* 24 August. See Frederic M. Sallagar, *The Road to Total War* (New York: Van Nostrand Reinhold, 1969).

109. Wood and Dempster, *The Narrow Margin*, 31.

between the legislature, the executive and the judiciary. The right to vote was progressively expanded throughout the nineteenth century, and Britain achieved near-universal adult suffrage in the interwar period thanks to the passage of the Representation of the People Act of 1918 and the reduction in age restrictions for women voters in 1928. As early as the 1850s, the British press was mostly privatized, free, and critical of political leadership. The British military became increasingly professionalized in the late nineteenth and early twentieth centuries as a result of a series of reforms including the 1871 abolition on commission purchase and the 1881 prohibition against flogging.

The legitimacy of the British government is illustrated by the suspension of normal politics and the creation of a coalition of the Labour and the Conservative parties under Prime Minister Winston Churchill from May 1940 to May 1945. In the interest of national unity, British political parties suspended normal politics voluntarily for the single purpose of victory over the Nazis. The suspension of party politics, however, did not represent a complete disappearance of democratic freedoms. In 1942, for example, newspapers and Members of Parliament questioned Churchill's leadership openly as Britain lost many of its Far East possessions. Churchill weathered the attacks and served, of course, for the rest of the war. Although our understanding of legitimacy refers to the system of government rather than the particular incumbents who control the regime, it is important to note that Churchill was enormously popular during the Battle of Britain and enjoyed approval ratings of almost ninety percent.

### BRITISH LEGITIMACY AND THE FAILURE OF GERMAN AERIAL DENIAL

The failure of Germany's denial campaign can be traced to many causes and we argue that the legitimacy of the British political system helps account for most of the factors that scholars have identified as crucial determinants of the battle's outcome. Consider, for example, the loyalty of British pilots. The lack of replacement pilots meant that experienced combat veterans had to fly repeatedly with little rest. Despite the dangerous conditions, very few pilots refused to fly. RAF fighter pilots served on a voluntary basis and unit cohesion remained high. As former British pilot C. S. Bamberger said: "Whoever was leading us was leading because, (a) he had landed the job whether he wanted it or not, and (b) he had 11 other people following him. And we were all going up because he was going up. You didn't want to let the team down."[110] Rather than fearing horizontal relationships among soldiers, the British fostered a

---

110. Budianski, "Britain: Defeating the Luftwaffe," *U.S. News & World Report*, 27 August 1990,.73.

team atmosphere that contributed to the willingness to fly despite fear and fatigue. It is difficult if not impossible to imagine that an illegitimate regime could have commanded the same degree of loyalty, unit cohesion, and volunteerism that characterized RAF fighter pilots.

Interservice coordination was another determinant of the battle outcome that was a partial reflection of legitimacy. We address the integration that was essential for Britain's command and control system below, but it is worth noting here that the battle involved several important instances of interservice cooperation. For example, anti-aircraft (AA) weapons that were financed by the Army's budget and manned by Army personnel fell under the operational control of Fighter Command. This coordination of ground-to-air defenses with Fighter Command allowed for increased effectiveness against inbound Luftwaffe raids and also diminished the amount of friendly-fire losses during the Battle of Britain. By integrating AA Command with Fighter Command, the British were able to utilize radar and the Observer Corps to coordinate an effective defense. Fighter Command was also able to borrow pilots from Bomber and Coastal Commands as well as co-opt prospective pilots from the Navy and Army during the critical shortage in August 1940. Had the other branches prevented the cooptation of pilots, it is doubtful that Fighter Command could have withstood the German onslaught. Furthermore, at the British command and control center in Bentley Prior, representatives from all the services—the RAF, the British Army, Observer Corps, the Admiralty, the War Office, and the Ministry of Home Security—were privy to the latest intelligence and conduct of the war.[111] Such coordination is rare in regimes that lack domestic legitimacy. Even though interservice coordination can improve combat effectiveness, illegitimate leaders usually prefer to keep their own forces divided for fear that any cooperation among them could undermine the regime.[112] When legitimacy is high, however, leaders are able to tolerate and promote interservice cooperation without fearing that such coordination will undermine domestic stability.

Related to interservice coordination, an efficient command and control system enabled the British to withstand the onslaught of the numerically superior Luftwaffe. Often called the Dowding System after its architect, commander-in-chief of Fighter Command Sir Hugh Dowding, the structure's most important element featured the integration of radar, radio monitoring and radio direction finding technology into a complex communication system that included dedicated telephone lines and the Defense Teleprinter Network.[113] Integration of

111. Terraine, *The Right of the Line,* 180.
112. Author, 1998.
113. This is not to suggest that the British were the undeniable leaders in military technology. In fact, the Germans had made earlier advances in radar technology that far surpassed

these systems allowed the British to conserve scarce resources by keeping planes grounded until the last possible moment. German officials such as Herman Göring had assumed that the British would waste resources by launching fighters en mass at the first sight of trouble. Largely due to the successful integration of radar and radio, however, Fighter Command was able to send small intercept parties to meet German bombers, often forcing them to break formation before dropping their payloads.[114] This tactic allowed the British to conserve resources at a time of critical shortages and to provide the most efficient defense against Luftwaffe raids. As Dowding pointed out, "The war will be won by science thoughtfully applied to operational requirements."[115]

Of course, regime legitimacy was not a sufficient cause of the effective command and control system. Legitimacy, however, was an enabling condition that made the design of an effective command and control system possible. Effective command and control requires a delegation of decision-making authority from civilian leaders to military officers and from high-ranking military commanders to subordinates. In the British case, the Sector Controllers—generally junior officers and former fighter pilots sitting at radar stations in central command—were granted exclusive authority to dispatch Fighter Command intercepts as they saw inbound Luftwaffe raids. While such independence of action is risky in an illegitimate regime that fears a coup, decentralization was not, of course, a threat to political stability in Britain. Related to this point, the Dowding System required planes to remain on the ground until the detection of an inbound raid, when pilots were "sent up blind" against numerically superior German forces. The critical shortage of pilots and machinery meant that there could be no room for freelancing. While legitimate regimes usually can rely on their professional militaries to follow orders, illegitimate regimes often have to worry about desertion if attrition rates rise dramatically.

One of the keys to British success in the Battle of Britain was London's ability to produce and repair fighter airplanes. After losing 453 Hurricanes and Spitfires during the Battle of France, Fighter Command had only 644 planes available in early July to resist the 2,600 aircraft available to Luftwaffe.[116] Beginning in April 1940, however, the Ministry of Aircraft Production (MAP)

---

the British system. The British, however, were the first to recognize the value of radar and integrate it within the command and control structure.

114. Wood and Dempster, *The Narrow Margin,* 412.

115. Ibid., 170.

116. Terrain's (*The Right of the Line*) figures for Fighter Command strength (174), and Wood's and Dempster's (*The Narrow Margin*) for the losses in Battle of Britain. Terrain figures on Luftwaffe strength taken from the Air Historical Branch Narrative, 181.

made a remarkable turnaround and was able to exceed the planned production of fighters. From April to August, 1940 the British made 603 fighter planes, twice as many as the Germans produced during this period. Equally remarkable, the Civilian Repair Organization (CRO) repaired 4,196 damaged planes between July and December, 1940.[117] The efforts of the MAP and CRO allowed the British to overcome a critical shortage of material.

As is the case with the establishment of an effective command and control system, legitimacy does not serve as a necessary, complete or sufficient explanation for industrial production. At the same time, however, the legitimacy of the British system made industrial production possible. Mass production of aircraft requires proficient organization and planning in addition to industrial capacity.[118] Richard Overy argues that the ability of British labor, management, and the state to cooperate contributed to a system of wartime production that was far superior to that of the Axis powers.[119] By contrast, Germany suffered from a political system that subordinated the industrial sector to military demands and the result was poor cooperation between the armed forces and industry. German aircraft production was accomplished by command (*Kommandowirtschaft*) that took little input from civilian industrialists: "Instead of providing central direction and efficiency the totalitarian state produced only rigidity of thought and disorganization on a grand scale."[120] As German engineers stated to SS leaders: "nobody would seriously believe that so much inadequacy, bungling, confusion, misplaced power, failure to recognize the objective truth and deviation from the reasonable could really exist."[121] By 1940 the British were producing 50 percent more aircraft than the Germans.

The British government also used nationalism instead of coercion to mobilize the populace, attain cooperation from labor and business, and extract and harness civilian resources for the war effort.[122] For instance, on 14 May Secretary of State for War Anthony Eden broadcast an appeal for civilian recruits to aid in the war effort.[123] Before Eden could finish the broadcast, recruits were already lined up at police stations. Within six days, a quarter of a million civilians had volunteered to join in the war effort. In another example, appeals

---

117. Wood and Dempster, *The Narrow Margin*, 201.
118. See Richard Overy "Air Power in the Second World War: Historical Themes and Theories," in *The Conduct of the Air War in the Second World War,* ed. Horst Boog (New York: St. Martin's, 1992), 12–13.
119. Ibid., 21.
120. Wood and Dempster, *The Narrow Margin,* 410.
121. Overy, "Air Power in the Second World War," 21.
122. Ibid., 12–13.; and Richard Hough and Denis Richards, *The Battle of Britain: The Jubilee History* (London: Hodder & Stoughton, 1993), 103–107.
123. Hough and Richards, *The Battle of Britain*, 102.

were made for the British public to donate money to help finance aircraft production. Millions of pounds flowed into the Ministry of Aircraft Production and "soon almost every city and major town in the country had contributed a Spitfire with its name on the plane."[124] As Hough and Richards argue, appeals to British nationalism should not be viewed today as trite or mere rhetoric. Rather, the appeals united the British people in the single-minded pursuit of victory over the Nazis: "Churchill's eloquence and honesty—offering only 'blood, sweat, toil and tears'—created a mood in which, for a time at least, cherished trade restrictions could be swept aside and willing labour work its heart out in long hours of overtime."[125] Mackay concludes that "…against the flaws and failings [of the British wartime economy] must be set the notable fact that Britain's war economy operated largely with the consent of the mass of the people. To be sure, coercive powers were there, but they were mostly held in reserve, and what happened was much more the product of a general acceptance of the need to conform and cooperate for a common end."[126]

Healthy civil-military relations also were a partial reflection of British legitimacy as well as an important determinant of the battle's outcome. Consider, for example, Churchill's willingness to allow the military to conduct critical aspects of the war autonomously. While illegitimate leaders often fear military autonomy as a potential threat to their existence and insist on retaining personal control of all major combat operations, leaders of legitimate regimes are more likely to encourage a degree of autonomy. In the British case, the military was allowed considerable input into the conduct and execution of the war. Decision making at the grand strategic level was carried out by committees that included both civilian and military personnel. While the British military was subordinate to political leadership, the military exerted considerable influence in the conduct of the war. As one scholar noted, the greatest attribute of the committee systems "lay in the principle insisted on by Churchill that the committees must combine the power to supervise with the capacity to act."[127] The system of civil-military relations led one historian to remark: "if Hitler made major strategic decisions against the advice of his generals the same

124. David Morgan and Mary Evans, *The Battle for Britain: Citizenship and Ideology in the Second World War* (New York: Routledge, 1993), 44.

125. Hough and Richards, *The Battle of Britain*, 103.

126. Robert Mackay, *The Test of War: Inside Britain 1939–45* (London: UCL Press, 1999), 230.

127. Henry Probert, "The Determination of RAF Policy in the Second World War," in Boog, *The Conduct of the Air War in the Second World War,* 699.

could not be said—for good or ill—of the British Prime Minister and his Chiefs of Staff."[128]

Many scholars have argued that poor intelligence was the cause of Germany's failure to coerce Britain.[129] While we agree that intelligence played a vital role in determining the outcome of the battle, we argue that the legitimacy of the British system helps account for some of the important differences between British and German intelligence capabilities. In Britain, for example, the use of civilian personnel was one of the keys to British success. Several noted British scholars, scientists, and linguists became officers in the RAF Voluntary Reserve, where they helped to thwart the Knickerbein beacon,[130] a directional radio signal designed to guide Luftwaffe bombers to a designated target. The beacon was detected by a British civilian, R. V. Jones, who convinced Churchill of the importance of neutralizing its effects. Jones and other civilian scientists designed countermeasures such as electric pulses that jammed or redirected the beam so that Luftwaffe pilots would drop their payloads in empty fields. The British were able to call on many other civilians to help gather intelligence, and the widely popular peacetime hobby of ham-radio operation offered the British intelligence community a wealth of trained personnel in signal interception. By contrast, the Germans had a severe lack of qualified radio operators. After Hitler came to power, Goebbels banned all amateur radio operations due to the threat of subversive elements. British Women were recruited into the WAAF to help with both radio monitoring and the Observation Corps and British air intelligence officers were dispatched to every squadron, group, and station. Conversely, the Germans did not utilize intelligence officers "at units below the size of Fliegerkorps until 1944."[131]

Poor intelligence was one of the principle reasons for the Luftwaffe's failure in the Battle of Britain. The two largest intelligence organizations in Germany, the Abwehr and Sicherheitsdienst under Heinrich Himmler, constantly battled each other over intelligence turf and never shared information. German intelligence officers, often poorly trained, were more concerned with pleasing Göring and Hitler than providing an objective view of the battle. Intelligence officers marked targets as "destroyed" whenever the Luftwaffe hit them regardless of whether they were ruined, thus leading Göring to conclude in Au-

---

128. Norman Henry Gibbs, *Grand Strategy,* vol. 1*: Rearmament Policy* (London: H. M. Stationery Office, 1976), 775, as quoted in Probert, "The Determination of RAF Policy in the Second World War," 686.

129. See, for example, Wood and Dempster, *The Narrow Margin*; Overy, "Air Power in the Second World War," *;* Pape, *Bombing to Win.*

130. Wood and Dempster, *The Narrow Margin*, 123–25.

131. Ibid., 120.

gust that the RAF was on the verge of collapse and to begin bombing population centers rather than military airfields.

While both the Germans and British made intelligence mistakes during the Battle of Britain, the different nature of the regimes made for very different intelligence situations. As Budiansky rightly points out, the intelligence problem was much worse for the Germans. "No one wanted to be the bearer of bad news to Göring or Hitler, and no one wanted to give away powerful knowledge to a potential rival."[132] Consequently, German intelligence was especially poor. As was true in Iraq during the Gulf War, the German case confirms that poor intelligence often is endemic to personalistic, authoritarian regimes based on one-person rule. By contrast, British intelligence officers were not afraid to offer pessimistic conclusions. The openness to conflicting opinions within the British decision-making apparatus allowed higher-quality intelligence estimates to be presented without fear of reprisal from an illegitimate leader. We do not argue that legitimacy always leads to high quality intelligence gathering in a deterministic way. Rather, legitimacy is an enabling condition that, at least in the case of the Battle of Britain, appeared to facilitate openness, adaptation and accountability.

Perhaps the German failure to coerce Britain was the result of the relative strength of the two sides. According to this perspective, the different outcomes in our two case studies reflect the fact that while Coalition forces were much stronger than the Iraqi military, the British and Germans were more evenly matched. Indeed, Pape has coded British vulnerability during the battle as "medium," indicating that "territorial control is threatened but additional military measures can reduce the threat."[133] Although we agree that the Iraqis were much more vulnerable to Coalition forces than were the British to the Germans, the legitimacy of the British system helps explain why London was not more vulnerable. For example, Pape notes that although the British faced heavy losses, the Germans faced heavier attrition. The rate of attrition, however, was a partial function of regime legitimacy. As argued above, British pilots who composed the core of the fighting force were more motivated and more loyal than their Luftwaffe counterparts. The ability of the British to incorporate radar and radio direction finding into their command and control system also reflected, as argued above, the legitimacy of the system and contributed to the high levels of German losses.

As Pape also notes, the British command and control system was remarkably resilient, never faced serious threats from Luftwaffe bombing and could

132. Budianski, "Britain: Defeating the Luftwaffe," 74.
133. Pape, "The Air Force Strikes Back," 20.

always move out of the range of German fighters in an effort to recoup their strength. The resiliency of the British radar, however, was due in large part to the ability to shift to alternative sites when damaged. Such adaptability required horizontal communication and delegation of decision making generally not found in illegitimate regimes.

Yet another possible rival explanation of the outcomes of our cases is that defense of the homeland explains the difference between Iraqi and British motives. As one anonymous reviewer suggested to us, the difference between Iraqi and British motives may reflect that the Iraqi Army was defending Saddam's ill-gotten gains while the RAF was fighting to save Britain from the Nazi menace. While defense of the homeland may help explain the service members' loyalty and commitment to battle, it is important to remember that defending the homeland is not always sufficient for generating highly motivated soldiers, and, conversely, that many service members who are not defending their homelands are highly motivated.[134] In addition, while hindsight shows clearly that Iraqi soldiers were not defending their homeland, they had no way of knowing that the U.S.-led coalition would refrain from marching on Baghdad. Indeed, given the prevalence of worst-case thinking in international relations, the extent to which intentions often are inferred from capabilities, and statements from some Bush administration officials indicating that full-scale attack was imminent, it seems quite possible that Iraqi soldiers did believe that the homeland was at risk, yet that they lacked motivation due to the illegitimacy of the regime.[135]

## AN OBJECTION TO THE ARGUMENT

ONE POTENTIAL objection to our argument is that Allied aerial campaigns failed to coerce Nazi Germany during the Second World War, and that because Nazi Germany was an illegitimate regime, Allied inability to coerce the Germans constitutes a failed case for our theory. Related to this point, as an anonymous reviewer suggested, the Soviet regime was illegitimate, yet the Red

---

134. As an example of service members who lacked motivation as they defended their homeland consider ARVN defense of South Vietnam in the face of invasions from the North. On factors that determine loyalty in battle, see Edward Shils and Morris Janowitz, "Cohesion and Disintegration in the Wehrmacht in World War II," *Public Opinion Quarterly* 12, no. 2 (summer 1948), 280–315; S. L. A. Marshall, *Men Against Fire: The Problem of Battle Command in Future War* (New York: Morrow, 1947); Samuel A. Stouffer, et. al. *The American Soldier* (Princeton: Princeton University Press, 1949).

135. On threat perception in international relations, see Robert Jervis, "Perceiving and Coping With Threat," in Robert Jervis, Richard Ned Lebow, and Janice Gross Stein, *Psychology and Deterrence* (Baltimore: Johns Hopkins University Press, 1985), 13–33.

Air force was characterized by high aircrew courage, unit cohesion, and low desertion rates in 1941–42.

Two responses deserve mention. First, we have argued in this paper that the legitimacy of the target is just one among many variables that may influence outcomes when attackers use aerial denial strategies. We do not suggest that legitimacy is so important that an illegitimate regime should never be able to resist aerial coercion. Identifying such cases, in other words, does not necessarily show that our theory is wrong. Rather, such cases may simply indicate that the effects of legitimacy can be overshadowed by other factors.

That having been said, however, the Allied failure to coerce Nazi Germany and the German failure to coerce the Soviet Union are not failed cases for our argument. Our theory does not make predictions about either case because both targets possessed an intermediate degree of legitimacy at the time. Note that legitimacy is a multidimensional concept and that we refer to at least six aspects of the phenomenon including consensus over the state's right to make rules, the public's shared acknowledgement of the ruler's authority, a willingness to pursue institutional procedures to redress grievances, the necessity of threatening force to obtain compliance, the regime's nationalist or other ideological credentials, and risk of a coup.

In the case of Nazi Germany, it is true that persecuted minorities, the political left, and elements of the university, military, and church did not support the regime, and that by the end of the war the regime had very little remaining legitimacy. At the same time, Dulles notes that "the actual seizure of power in the spring of 1933 occurred largely from below" in a democratic election in which the Nazis won 44 percent of the vote.[136] Broszat shows that the general populace continued to support Hitler through late 1944, and "that significant and fundamental resistance arose only in the initial and final phases of Nazi rule: that is, either before Nazism had fully developed its magnetic appeal and integrating potential or after this potential had begun to erode."[137] In other words, Nazi Germany constitutes a mixed, intermediate case in that the regime was legitimate in some ways but not others.

With respect to the Soviet Union, research on Soviet legitimacy from 1917 through the 1940's is complicated by a lack of data on public attitudes and disputes among historians of the period. An early wave of scholarship has shown that, particularly during Stalin's purges, the Soviet regime was truly totalitarian and used terror as a "tool of governance" to coerce the masses until

---

136. Allen Dulles, *Germany's Underground* (New York: Macmillian, 1947).
137. Martin Broszat, *The Hitler State: The Foundations and Development of the Internal Structure of the Third Reich* (New York: Longman, 1981).

Stalin's death.[138]Revisionists, however, have demonstrated that the Soviet system enjoyed popular legitimacy for accomplishments such as overthrowing the inept Czarist regime[139] and had support among significant segments of the population.[140] Moreover, the most recent scholarship on the purges (1934–41) suggests that the "Great Terror" affected ordinary Soviet citizens less than was thought before the opening of NKVD archives[141] and collections of letters from ordinary citizens to the government.[142] Based on this state-of-the-art evidence, it seems reasonable to conclude that despite Stalin's terror the Soviet regime probably had a moderate degree of legitimacy.

## CONCLUSION

WHEN IS AIR power an effective instrument for coercing states to change their policies? Most scholars agree that air power may be effective for coercion when attackers bomb the military capacity of their rivals. Even though ardent and partial advocates of this strategy agree that it does not achieve coercion all of the time, scholars have failed to articulate conditions that can explain when bombing military targets is likely to be effective and when it is likely to fail. We argue that aerial-based denial strategies are more likely to lead to coercion when political leaders of target states lack domestic legitimacy than when they command widespread support. Our case studies indicate that low-legitimacy regimes tend to be unable to rely on their militaries' ability and willingness to continue to fight during times of crisis, while militaries as well as civilians in high-legitimacy regimes tend to rally around the flag during war. As a result, aerial-based denial strategies are more likely to cause militaries in low-legitimacy regimes to crumble and to desert political leaders while militaries and civilians in high-legitimacy regimes are more likely to remain loyal to political leaders and to adapt to rapidly changing circumstances even as bombing continues.

138. Merle Fainsod, *How Russia is Ruled* (Cambridge: Harvard University Press, 1961); Seweryn Bialer, *Stalin's Successors: Leadership, Stability, and Change in the Soviet Union* (Cambridge: Cambridge University Press, 1980).

139. Arthur H. Miller, William Reisinger and Vicki Hesli, "Public Support for New Political Institutions in the Russian, Ukrainian and Lithuanian Republics," *Journal of Soviet Nationalities* 1, no: 82 (**date** 1991): 107.

140. Sarah Davies, *Popular Opinion in Stalin's Russia: Terror, Propaganda and Dissent, 1934–1941* (Cambridge: Cambridge University Press 1997).

141. Ibid.

142. Sheila Fitzpatrick, *Everyday Stalinism: Ordinary Life in Extraordinary Times: Soviet Russia in the 1930s* (Oxford: Oxford University Press, 1999).

In no way do we suggest that our argument serves as a final word in the conversation on strategic bombing. To the extent that our argument is valid or partially valid, then additional work needs to be done to determine whether our claims can be generalized to other cases.[143]Even if our analysis does not help explain a broad range of cases, our hope is that scholars will continue to integrate political factors into their analyses of when strategic bombing leads to coercion. The literature on domestic politics and war has become increasingly rich in recent years and the insights that this literature has produced may have additional implications for the analysis of strategic bombing.

143. The 1999 NATO campaign in Kosovo is one possible candidate for testing our argument. See Hosmer, "The Conflict over Kosovo: Why Milosevic Decided to Settle When He Did," MR-1351-AF, 2001.