Subject: 247. <u>Red Team: An Intelligence Disclosure & New Estimates for Afghanistan Counter-Insurgency Equations; Testing F. J. West's Early Exit Hypothesis</u>

Dear Dr. Fischhoff, Dr. Prewitt and Colleagues:

A former Assistant Secretary of Defense (International Security Affairs) and journalist,
Francis J. West, gave an interesting recent overview of new aerial surveillance and fast
response technologies in Afghanistan.<1> The DNI/Air Force technology may
dramatically change some of the traditional war-fighting equations and improve US
policy options.

If the fundamental US war objective is to deny the Taliban a safe haven and staging
ground in Afghanistan, from which it or al-Qaeda will plan attacks against America,

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then West's disclosure implies that - with a fresh look - the Obama Administration now may be able to achieve this objective and begin to reduce US troops and costs quickly.

Thus: A Red Team should re-evaluate the conventional US theory of where the Taliban and its allies will try to create safe havens and staging grounds and see if Mr. West (who has been to Afghanistan frequently) has good information and has made the right inferences. There are two reasons to think that he is right:

1.) First, the US Air Force has developed and deployed advanced aerial surveillance technologies on blimps about one mile above each US outpost. At this altitude they are difficult to detect or impossible to reach with rifle fire. The advanced cameras, radio frequency (including cell phone) monitoring, and other sensors are tied, in real time via satellite, to operators and analysts in Florida and California who are assisted by sophisticated software to detect unusual human activities, the glint of sunlight from a cellular telephone, or the massing of human beings in these rural areas, etc. Air Force planes in Afghanistan also have highly sophisticated cameras that can provide real-time video feeds directly to ground commanders from high altitudes or images from higher speed, low altitude flyovers to check suspicious activity.

Explaining "Prophet" - 100% Accuracy?
West's disclosure explains the elliptical remarks in Restrepo that an US intelligence radio voice, called "Prophet," correctly warned the men at the outpost of *every* forthcoming attack on their position. This, also, was Mr. West's impression of how good and reliable the Air Force technology has become.

This level of new technology implies that it will be impossible for the Taliban or al-Qaeda to establish significant safe havens and training facilities in rural Afghanistan. Any significant massing of people can be detected quickly and, if the US maintains a military presence, Recon teams or inspectors can visit any new and suspected sites and they can be destroyed quickly.

2.) The second reason to think that this basic US war objective is quickly achievable - i.e., if the DNI system/Red Team connects the dots - is that the Taliban and al-Qaeda now have little reason to build facilities and train men in rural Afghanistan. They have better and safer havens in Pakistan. Rural Afghanistan is one of the most remote places on the planet and it is not clear why any rational person would want to put a training facility in rural, barren Afghanistan when more hospitable, more easily accessible, and less detectable sites (i.e., because the people can live and move in urban areas in Pakistan and blend in) are now available to terrorists. <2>

Mr. West's view is that the US also, by training an Afghan army and - now - supporting them with its new aerial technology, can secure them, the capital, and larger population Centers from massed attacks. And reduce its own personnel and costs quickly.

Background

It may be of interest, in this context, to put into the public record a copy of Steven Goode's paper from Parameters (Winter 2009/2010), "A Historical Basis for Force Requirements in Counterinsurgency," pp. 45-57, updating RAND's 1995 study. The new database expands from N=15 conflicts to N=100 [42 of which are deemed comparable to Iraq and Afghanistan]. It continues the modeling tradition of linking force requirements to population rather than to a (e.g., 10:1) force ratio against the insurgent forces.

The National Academy members might want to recommend further analysis of these data, and tests of different quantitative and simulation models for counterinsurgency conflicts of different types. These might suggest rapid learning experiments for a Red Team to consider in light of the new upgrade in technology on the counterinsurgency side in Afghanistan: General (Dr.) Petraeus appears to be collecting time series data for 500 variables in Afghanistan and the new aerial surveillance technology is a quasi-experiment (with pre- and post- data). An analysis may strengthen a hypothesis that a safe and more rapid draw-down of US forces can begin this summer.

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<1> Mr. West spoke and answered questions in connection with his new book, The Wrong War: Grit, Strategy, and the Way Out of Afghanistan at the Politics & Prose bookstore in Washington. The nature and extraordinary success rate of the new US/DNI aerial surveillance capabilities (and the real-time satellite links, 24x7, to support teams and analysis Centers in the US), which are deployed for all US outposts, countrywide, have not, to my knowledge, been previously disclosed. The discussion and Q&A were recorded and should be available online on booktv.

<2> Equivalent aerial surveillance probably does operate quietly in Pakistan, even in urban areas. The technology may be good enough to follow, from above, the movements of people from key buildings to other sites.

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A Historical Basis for Force Requirements in Counterinsurgency

STEVEN M. GOODE

Over the last eight years, one question has repeatedly come up in regard to the wars in Iraq and Afghanistan: How many soldiers are enough? The question was first raised before the Iraq war started, with highly publicized disagreements between senior military leaders regarding the number of forces needed to secure Iraq after the invasion. The debate reached another peak when the "surge" strategy was announced. It has once again become the subject of national discussion, this time with respect to Afghanistan. Despite years of debate, our understanding of force requirements for counterinsurgency has advanced little since 1995, when James Quinlivan of RAND published a seminal article on the subject.[1]

The current article describes work done by the Center for Army Analysis (CAA) to better inform the discussion by examining historical data related to counterinsurgencies. The intent is not to make any policy recommendations. Nor should this analysis be interpreted to suggest that force levels alone are the key to victory in counterinsurgency. Having enough military forces is a necessary, but by no means sufficient, condition for success. The twentieth century is replete with examples of counterinsurgents winning Pyrrhic military victories that resulted in political losses. The French in Algeria and the Portuguese in Mozambique and Guinea-Bissau prevailed militarily but ultimately acceded to the insurgents' demands for independence. The British devoted enormous forces to Cyprus and suffered relatively few losses but nonetheless had to give up control of most of the island.

That said, however, force levels do matter, and history can provide a guideline for force requirements in counterinsurgency. The analysis described in this article shows that there are three major drivers of military requirements. First, as previous studies have argued and current doctrine emphasizes, security forces have to be sized relative to the population. Second, the more intense the insurgency, the more forces are required to reverse

increasing insurgent violence. Third, the larger the percentage of personnel that are drawn from the host nation, the fewer forces will be needed overall. Before detailing the exact relationships between these factors and force requirements, or discussing their implications for US policy, it is appropriate to briefly review the current state of the debate.

Past Efforts

Current doctrine as contained in an Army and Marine Corps field manual says the following about force levels in counterinsurgency:

> . . . [N]o predetermined, fixed ratio of friendly troops to enemy combatants ensures success in [counterinsurgency] . . . . A better force requirement gauge is troop density, the ratio of security forces (including the host nation's military and police forces as well as foreign counterinsurgents) to inhabitants. Most density recommendations fall within a range of 20 to 25 counterinsurgents for every 1,000 residents in an [area of operations]. Twenty counterinsurgents per 1,000 residents is often considered the minimum troop density required for effective [counterinsurgency] operations; however, as with any fixed ratio, such calculations remain very dependent on the situation.[2]

These ratios appear to be based on Quinlivan's work. He emphasized, though did not originate, the idea of sizing security forces to the population rather than the enemy. Further, the recommendation of 20 to 25 counterinsurgents per 1,000 residents appears to be based at least in part on his observations that British forces in Northern Ireland and Malaya peaked at about 20 per 1,000 residents, and that international forces in Bosnia and Kosovo reached levels between 20 and 25 per 1,000.[3] As Quinlivan noted, however, those cases represent only part of the scale. History also includes cases such as the postwar occupation of Germany, where successful stability operations were mounted with only 2.2 security forces per 1,000 residents. In contrast, the counterinsurgents under French command in Algeria peaked at nearly 60 per 1,000 residents, and the Russians committed more than 150 soldiers per 1,000 residents in Chechnya in 2003.

The other major study on this topic was by John McGrath.[4] McGrath's major contribution was the observation that counterinsurgent forces need to dedicate a portion of their personnel to police duties. Based on his calcu-

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lations of police-to-population ratios in several major American cities, McGrath suggested a figure of 4.1 soldiers per 1,000 residents should be devoted to police duties. This figure may not be precisely appropriate for all nations, but McGrath's insight is valuable because it underscores the need to include police functions in any discussion of security force requirements.

Data and Definitions

Past efforts on this subject have been hampered by the relative lack of data. What information was available on past counterinsurgencies has been scattered across a number of sources. The CAA identified three problems caused by this lack of data. First, it has limited the number of case studies available for examination. Quinlivan and McGrath together looked at only 15 cases. This contrasts with the dozens of insurgencies, peacekeeping operations, contingency operations, and the like that have taken place since 1945. The second problem is that while not all conflicts are equally intense, there has been no agreed-upon measure of intensity. If, as this article will show, more intense insurgencies require larger counterinsurgent forces to defeat them, then the intensity of the insurgency becomes a key driver of force requirements. Third, the lack of data has prevented any significant analysis of the relationship between force levels and intensity over time. It can be misleading to use peak military numbers, as force levels often continue to rise for a time after an insurgency is largely defeated. In order to remedy this lack of data, CAA built an Irregular Warfare Database containing year-by-year data on more than 100 conflicts. The analysis described in this article was built on that database.

The analysis of irregular warfare has also been bedeviled by a profusion of terms of overlapping scope. Quinlivan examined "stability operations," while McGrath studied "contingency operations." Each term covers a wide range of conflicts and operations. Of the 15 cases studied by the two authors, three (Germany, Austria, and Japan) were peaceful post-war occupations of defeated powers. Six (the Philippines, Malaya, Northern Ireland, the Punjab, Iraq, and Afghanistan) can be described as counterinsurgencies. Six (the Dominican Republic, Haiti, Cambodia, Somalia, Bosnia, and Kosovo) were stabilization, humanitarian, or peacekeeping operations. The problem with grouping such disparate situations is that the force requirements for different kinds of operations may be very different. The occupation of Germany after World War II could be conducted with a relatively low force-to-population ratio because the Germans had been soundly defeated and offered essentially no resistance to the occupying forces. Simi-

larly, in many peacekeeping operations, the peacekeepers are present with the consent of the local population and face relatively little armed opposition. In contrast, the insurgencies in the Philippines and Malaya required considerably larger forces.

Scope and Methodology

CAA's analysis was motivated by a desire to put force levels in the current wars in Iraq and Afghanistan into historical context. Accordingly, the scope was limited to counterinsurgencies, as defined in joint doctrine:

> Insurgency: An organized movement aimed at the overthrow of a constituted government through use of subversion and armed conflict. Counterinsurgency: Those military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency.[5]

The scope was narrowed further by excluding cases where the regular armed forces of a third party intervened in significant numbers on the side of the insurgents. This excluded conflicts such as the Vietnam War, which blended conventional warfare with counterinsurgency. After narrowing the scope, the remaining cases were examined to determine which had sufficient data to support analysis. This left 42 cases from the Irregular Warfare Database for study. Iraq and Afghanistan were examined separately using other sources in order to include the most recent data available.

The analysis was focused solely on force levels, not the "political, economic, psychological, and civic actions" cited in the definition. As doctrine indicates, factors such as governance and development are very important. They are not within the scope of the analysis described here, however. Nor were the strategies and tactics employed by counterinsurgent forces factored into the analysis. Again, this decision should not be construed to say that such factors are not important. Clearly they are. Rather, they were not considered in this analysis for two reasons. First, the purpose of the analysis was simply to determine how many forces are needed, regardless of how they are employed. Second, because the strategies employed by counterinsurgent forces have varied widely throughout history and even within specific conflicts, it is difficult to characterize those strategies in a consistent manner. Should the Strategic Hamlets program in Vietnam be considered equivalent to the Briggs Plan in Malaya or earlier British efforts against the Boers? What about the erection of physical barriers in Baghdad to quash sectarian conflict? Such questions are important but, again, beyond the scope of this analysis.

In accordance with doctrine and previous studies, security forces were measured per 1,000 residents. Also in keeping with doctrine, security forces included not only foreign counterinsurgents but also the host nation's armed forces, police, and allied militias and paramilitaries. The one exception was Northern Ireland, where some Unionist groups notionally aligned with the government but which were proscribed as terrorist organizations were not counted among the security forces.

Forces were measured by manpower only, not by quality or role. Clearly, different forces in a given conflict can vary widely in effectiveness due to variations in their training, motivation, leadership, equipment, level of corruption, and other factors. When studying a specific conflict in detail, it is possible to make some qualitative judgments about the relative effectiveness of the various forces involved. What is much more difficult is comparing forces across conflicts in a consistent manner. There are ways to examine the relative effectiveness of the Afghan National Army and Afghan National Police, but it is much less clear how to go about comparing the Afghan National Army of 2009 to British units in Malaya in 1952 or Russian forces in Chechnya in 2001. Nor is it often possible to break out numbers according to combat and support roles. Accordingly, this analysis used total military strength for all cases.

It is possible to distinguish, however, between local and intervening security forces. This distinction was made in the analysis to capture the many important differences between the two groups. Intervening forces are often better trained and equipped, but locals typically have the advantage in areas such as language skills and cultural familiarity. Local forces are defined to include all soldiers, police, and militias raised from the area affected by the insurgency. For example, in the Malayan Emergency, soldiers raised from Malaya were counted as local while British and Commonwealth units were considered to be intervening forces. Determining which forces can truly be considered local can be difficult when there are multiple ethnic, linguistic, or religious groups within a nation. This is particularly true if support for the insurgency is largely drawn from a particular subnational group. Ethnic Turkish forces employed by the British in Cyprus were local in the sense that they lived on the island, but in many ways they were foreign to the ethnic Greek population from which the insurgents originated. Similarly, in Afghanistan today it is not clear that many Pashtuns consider ethnic Tajik or Uzbek soldiers to be much less foreign than American or NATO forces.

The central hypothesis driving this work was the more intense the insurgency, the more security forces are required to start to reduce the violence level. There are many possible metrics to use to measure the intensity

of an insurgency. Chief among these measurements are the number of insurgents; insurgent attacks; and civilian, insurgent, or counterinsurgent casualties. Ultimately, the metric chosen for the CAA study was the number of counterinsurgents (i.e., security forces) killed in action each year per million residents. This number includes both local and intervening forces. There were two reasons for choosing this metric. First, it measures the amount of violent resistance to the security forces' attempts to control the nation or region. Second, it is more reliably recorded than other possible metrics.

That being said, low levels of violence against security forces do not necessarily mean counterinsurgents have control of the nation. Insurgents may avoid armed conflict with the security forces in favor of engaging in subversion. This can involve co-opting the security forces through intimidation, corruption, and penetration by insurgent sympathizers. It can also include using a mixture of inducements, threats, and violence to gain control over the population. If the insurgents can threaten and kill civilians with impunity, the government may come to be seen as ineffective even if security forces are able to operate without being attacked. Low counterinsurgent casualties could also reflect an unwillingness or inability on the part of security forces to operate in dangerous portions of the nation that are thereby, in effect, ceded to the insurgents. Due to these dynamics, other metrics tailored to specific conflicts may be better measures of political control. For example, are government representatives able to sleep in their own villages without fear? Can the government successfully conscript people into the security forces, collect taxes, or administer justice? Are key civilians such as poll workers being killed or intimidated? The problem with all these measures, valuable though they are, is that there is little, if any, data available that can be used to compare different insurgencies.

Counting the number of insurgents is also problematic at best. Government and insurgent sources often provide different data for political reasons. Even in those cases where the insurgents prevailed and became the ruling power, they tended not to keep very good records of their own numbers during the conflict. A neat division between civilians and insurgents is rarely possible. A common characteristic of insurgents is that they fight only part of the time, blending back into the civilian population when prudent. Some individuals may participate only periodically, due to coercion by more committed insurgents or to avenge specific indignities perpetrated by the security forces.

Insurgent and civilian casualties are even less reliable as metrics of the intensity of the insurgency. The first category reflects government forces' ability to kill or wound insurgents, not the degree to which the insurgents oppose the government. Civilian casualties may be caused by any of the ac-

tors—the insurgents, the government, or others, including criminals and feuding ethnic, religious, or political groups. Moreover, all parties concerned have strong incentives to misrepresent the statistics. The insurgents will claim that the government is slaughtering innocent civilians but is incapable of killing insurgents, and the government will insist the opposite is true.

Finally, for most historical insurgencies, reliable figures do not exist for the number of insurgent attacks carried out or security forces wounded. Even where such data exist, they are difficult to interpret. Attacks vary widely in type, size, target, and effectiveness. They can include anything from nonlethal sabotage of pipelines, to car bombs in packed markets, to pitched battles with security forces. Similarly, the definition of wounded may include all injuries or only severe wounds, and may include injuries other than those caused by combat.

In light of these circumstances, the number of counterinsurgents killed in action (KIA) is assessed as the best available metric of the intensity of insurgent resistance. As with force levels, the KIA rate is divided by population to allow comparison of insurgencies across nations with widely varying populations. The number is divided by million, instead of thousand, residents because annual security force KIA numbers are much smaller than total security force levels. Security force KIA per million population is therefore used as a measure of violence, although it does not include violence against civilians.

Analysis, Results, and Accuracy

The goal of the analysis was to find the number of counterinsurgent forces required to arrest and begin to reverse a given level of insurgent violence against the security forces. Accordingly, 42 cases were examined to find instances of turning points, where violence peaked and then decreased. Thirty-two such peaks were found in the data across 23 of the insurgencies, as some insurgencies experienced multiple peaks over a period of several years.

As expected, additional forces were indeed needed to reduce higher levels of violence. This initial relationship was not strong enough, however, to be particularly useful for planning force requirements, so a number of other factors were examined as possible drivers. These additional elements included measures of geography, demographics, insurgent organization and motivation, economic development, and counterinsurgent rules of engagement. Ultimately, the only factors that turned out to be significant were the number of personnel killed and the fraction of security forces drawn from the host nation.

Conflict	Violence Peak Year	Security Force KIA per Million Population	Security Forces per 1,000 Population	Fraction of Security Forces Local
Algerian War (1954-1962)	1958[†]	297.5	46.3	0.11
Angola (1961-1974)	1968	20.2	12.3	0.44
Argentina & The Dirty War (1969-1983)	1976	5.9	6.6	1
Colombian Civil War (1964-present)	2002[†]	28.1	12.2	1
Contras in Nicaragua (1981-1990)	1987	460.3	22.9	1
Dhofar Rebellion (1965-1976)	1973	2.4	6.7	0.68
El Salvador (1979-1992)	1983[†]	358.6	7.7	1
Greek Civil War (1946-1949)	1948	507.9	29.9	1
Huk Rebellion (1946-1954)	1952	7.8	2.6	1
Indonesia in Timor (1975-1999)	1978	620.5	33.6	0.33
Kurdish Rebellion vs. Turkey (1984-1999)	1994	17.7	8.4	1
Malaya (1948-1960)	1951	66.6	12.7	0.76
Mau Mau Revolt (1952-1956)	1954	44.8	9.3	0.87
Mozambique (1964-1974)	1973 [†]	23.1	5.9	0.54
Nepal People's War (1996-2008)	2002[†]	26.1	5.3	1
Northern Ireland (1968-1998)	1972 [†]	109.3	18.4	0.23
Portuguese Guinea (1963-1974)	1967	269.5	38.4	0.15
Rhodesia I (1966-1970)	1968	2.5	3.4	0.88
Shining Path in Peru (1980-1999)	1992 [†]	17.5	7.7	1
Tamil Insurgency (1983-2002)	2000	48.3	8.8	1
Tunisian Independence War (1952-1956)	1954	7.6	14.1	0.12
Tupamaro Insurgency in Uruguay (1963-1973)	1972	7.1	4.3	1

† Representative year; multiple violence peaks occurred.

Figure 1. Violence Peaks in Counterinsurgencies

This data was used to determine the following force threshold equation:

$$F = 1.2 \times (K/L)^{0.45} + 2.8$$
where:

F = security forces required per 1,000 population to reduce violence
K = number of security forces killed annually, per million population
L = fraction of security forces local to the conflict area

In words, this formula reveals that the minimum counterinsurgent force is 2.8 soldiers per 1,000 residents, with more forces required as the violence level increases. Additionally, the larger the proportion of security forces drawn from the local population, the fewer personnel will be needed to deal with the violence. The implications of this equation are discussed later in this article, but before turning to the implications a discussion of the accuracy of the equation is in order.

If the threshold equation is correct, three things should be observed. First, in conflicts where the counterinsurgent effort achieved and maintained a force equal to or greater than the threshold, the violence level should drop to and stay at a relatively low level. Second, if the counterinsurgent side never achieves the force threshold, the violence should increase until the insurgents win a military victory. Third, if the counterinsurgent forces are entirely comprised of persons from outside the host nation—mathematically, if L is zero—the counterinsurgents should fail. Seventeen of 19 cases tested against these criteria turned out as expected, for an accuracy of 89 percent. The affirmed cases were two conflicts with zero or near-zero levels of local forces (the First Chechen War and the British in Palestine), 14 conflicts where the counterinsurgents had more than the threshold force, and three conflicts where the counterinsurgents never had enough forces once the insurgency began. The two cases that did not match expectations were the Chadian Civil War of 1965-69 and Venezuela in 1960-63. In both these conflicts, the violence level dropped even though security forces did not meet the calculated force requirements.

Another way to test the threshold equation is to look at yearly data. Given force level and KIA data for one year in a conflict, the equation can be used to forecast whether the violence level will increase or decrease during the next year, and the forecast can be checked against the historical record. Here the equation performs less well, with an overall accuracy of 63 percent. This accuracy increases as the violence level increases, to 67 percent at per-capita KIA rates similar to those of Afghanistan in 2009 and to more than 75 percent for conflicts as violent as the Second Chechen War or the Soviet experience in Afghanistan. The annual forecasts are less accurate than those for conflicts overall for several reasons. First, the analysis can-

not predict decisions by either side in the conflict to escalate or de-escalate the conflict in a particular year. Second, the historical data is often limited and approximate, and presumably not 100 percent correct. Both of these reasons have a greater effect on accuracy at relatively low violence levels, because small absolute fluctuations have a greater proportional effect in low violence arenas. Nor is it surprising that accuracy in forecasting force requirements should increase as violence increases; it seems probable that the more violent the insurgency, the more security requirements come to dominate the other aspects of counterinsurgency.

The threshold equation also works well for Iraq. Using annual population,[6] force level, and KIA data,[7] the formula shows that combined Iraqi and Coalition units met the force threshold and violence began to decrease in 2006, though US and civilian casualties did not peak until 2007. In contrast, violence in Afghanistan has not yet peaked. Based on seasonal trends and the data available, it is reasonable to expect approximately 2,000 security force KIA in 2009 (or 69 KIA per million residents). Using a mid-year population of 28.9 million[8] and current security forces[9] (of which 65 percent are Afghan),[10] the analysis suggests that a ratio of 11 security forces per 1,000 residents would be required to arrest the current violence, compared to the current ratio of about 9 per 1,000. These are approximate numbers using open-source data, and they do not address the constraints on raising additional forces quickly. Still, they give some idea of how the current strength of security forces compares to the requirements suggested by history. Figure 2 puts the conflicts in Iraq and Afghanistan into historical context in terms of violence and calculated force requirements.

Conflict	Year	KIA per Million Population	Forces per 1,000 Population Required to Reduce Violence		
			100% Local	65% Local Forces	10% Local Forces
Colombian Civil War	2002	28	8	9	18
Afghanistan	2008	50	10	11	22
Malayan Emergency	1951	67	11	12	25
Iraq	2006	120	13	15	31
Algerian War	1958	298	18	21	45
Contras in Nicaragua	1987	460	21	25	55

Figure 2. Comparison of Force Requirements

Implications for Policy

The results of the CAA study have several implications for policy-makers. First, as noted in previous studies, security forces should be proportional to the population, and in nations with tens of millions of residents the force requirement may outstrip available resources. Second, the more intense the insurgency, the more personnel will be required to reduce the violence level. Since insurgent violence historically tends to increase over time unless it is checked, the longer it is allowed to worsen the more forces will be required to turn the situation around. If the violence increases for too long, it may spiral out of control.

Third, in counterinsurgency, the higher the proportion of local security forces the better. This may seem counterintuitive, since local forces may not be trained, led, or equipped to western standards. Local forces possess distinct advantages, however, in terms of native familiarity and increased commitment. They understand the human terrain that is so critical in counterinsurgency, speak the area's languages, and understand the culture. If they are operating in their home area, they can draw upon a lifetime's experience and on personal connections cultivated over many years. This intense familiarity is likely to extend to a better understanding of the physical geography as well. In contrast, foreign soldiers may be resented as occupiers and infidels, and may, through ignorance or arrogance, commit blunders that alienate them from the population.

Local forces have other advantages when it comes to persistence and motivation. In contrast to foreign units, they do not rotate out of the conflict theater. Their understanding of the complex and ever-changing dynamics of the situation is not interrupted by redeployment. Local forces may also be more personally committed to the fight, because they know that if the insurgents win, their own lives and those of their families are at risk. Also, the presence of substantial local security forces may not only be a driver, but also a result of success, because such forces imply that there is a functioning government that is capable of convincing its people to side with the counterinsurgents. As the threshold equation suggests, if the counterinsurgents cannot convince any locals to join their forces, their cause is probably lost.[11] Moreover, the insurgents and government compete for support from the same pool of recruits. The more civilians who can be recruited into the security forces, the fewer who are available for recruitment by the insurgents.

Fourth, even when there is no violence against counterinsurgent forces, the constant term in the equation, 2.8 soldiers per 1,000 residents, suggests that a portion of security forces are needed for police duties. This number is

somewhat lower than McGrath's figure of 4.1 police per 1,000 residents, but his conclusions were drawn based on circumstances in five US cities. The calculation for the United States as a whole is lower, around 3.3 police per 1,000 residents. Around the world, police-to-population ratios vary from near zero to more than 10 per 1,000 residents, with an average between three and four.[12] The determinants of police force size are many, with police-to-population ratios generally higher as wealth, population density, and political repression increase. Statistics on police strength do not always include administrative or other support personnel. In some nations they may include paramilitary or gendarmerie units not counted in other nations. Nor is the western model of policing the only one. In many societies, disputes may be resolved by informal methods, and order is enforced by people who wear no uniforms and draw no salary. Thus, this analysis should not be taken to mean that all countries require 2.8 uniformed police per 1,000 residents. Rather, it simply suggests that this number is approximately the average requirement for peacetime security forces in the cases studied.

Cautions and Conclusions

It is hoped that this analysis will provide useful insight for future efforts to determine force requirements. It is not, however, an easy solution to a tremendously difficult problem. War cannot be solved through equations. All that analysis can hope to do is provide useful insight and advice to leaders who are grappling with the complexity of real-world decisions. This analysis is descriptive, not prescriptive. It looks at what happened historically and attempts to explain trends. Any attempt to use such an analysis to drive policy should be conducted with great caution.

This article examines the military and security forces needed to reverse increasing insurgent violence. Having enough forces to reach such a turning point does not, however, equate to victory, or even the attainment of low levels of violence. Once insurgent momentum is reversed, the security forces have to remain for years until the violence eventually drops to low levels. Even then, political success can be elusive.

Another caveat of the work is that the analysis cannot predict the violence level before a conflict starts. Many insurgencies simmer at a low level for years before becoming serious enough to provoke a significant reaction from the government. In contrast, the Soviet Union faced intense resistance immediately upon invading Afghanistan, with more than 4,000 Soviet and Afghan soldiers killed every year of the conflict (or more than 250 fatalities per million Afghan residents). Policy-makers contemplating intervening in other nations should remember that not only can invasions lead to insurgen-

cies; they also can lead almost immediately to levels of violence more than three times that currently seen in Afghanistan after eight years of war.

The analysis is built on annual data and its forecasts are on an annual basis, but a year is a long time in a war, and even longer in domestic politics. Even several years into an insurgency, the analysis is less than 70 percent accurate in forecasting whether violence will increase or decrease in a given period. Further refinements to the analysis may improve this accuracy rate, but it will never reach 100 percent. Even if it could, military efforts alone cannot ensure victory in counterinsurgency. At best, having adequate forces can enable the counterinsurgent side to provide a certain level of security, and security itself is a necessary but not sufficient condition for victory.

NOTES

1. James T. Quinlivan, "Force Requirements in Stability Operations," *Parameters*, 23 (Winter 1995-96), 59-69.

2. US Army, Field Manual 3-24, *Counterinsurgency* (Washington: Headquarters Department of the Army, 2006), 1-13.

3. James T. Quinlivan, "Burden of Victory: The Painful Arithmetic of Stability Operations," *Rand Review*, 27 (Summer 2003), 28-29.

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