Systems Thinking and Counterinsurgencies

Jim Baker

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This article presents the essentials of a successful counterinsurgency strategy by applying a technique known as systems thinking.[1] The fundamentals of good strategic thought lie both in recognizing the most significant interactions between different players, how they influence each other in unexpected ways, and how to measure progress in achieving the ends of the strategy. Systems thinking has proven successful in other contexts at explaining human behavior, policy choices, unintended consequences, and the resistance of systems to change. It also offers insight into how to assess one of the most difficult questions related to strategy in complex environments—how to know when the strategy has been successful.

A strategist encounters many difficulties in developing and implementing a counterinsurgency strategy. One major impediment is the lack of a clear and simple way to describe the strategy—US military forces and senior policymakers have traditionally shown a need to learn and re-learn the basic tenets of counterinsurgency strategies. Another difficulty is determining appropriate measures of success, as the twists and turns of a counterinsurgent campaign often lead to considerable ambiguity regarding progress in relationship to the ultimate goal. Issues like these are not unique to counterinsurgencies. Systems thinking has proven useful in understanding public management and policy, energy and the environment, and theory development in the natural and social sciences. Many of these have something in common with insurgencies—complex actors and non-linear relationships, difficulty in measurement, band-aid solutions, impatience with results and unintended consequences or side effects. Systems thinking can provide intuitive and counterintuitive insights for understanding counterinsurgencies. While counterinsurgent theorists will encounter much that looks like "old

wine in a new bottle," several advantages accrue from developing and defending a counterinsurgency strategy through the lens of systems thinking, including an approach for gauging progress.

Four different models of an insurgency will be introduced. Each model extends the previous one, providing new insight about the dynamics of counterinsurgent operations. In addition to unveiling the strategic imperatives for a counterinsurgent, the models also suggest a new way to organize measures of progress in a counterinsurgent campaign. First, however, a short introduction is needed to explain basic systems thinking.

Systems Thinking

All systems thinking models rely on two feedback loops—balancing and reinforcing loops. A reinforcing loop describes systems where elements reinforce one another, creating either a virtuous or a vicious cycle (Figure 1).
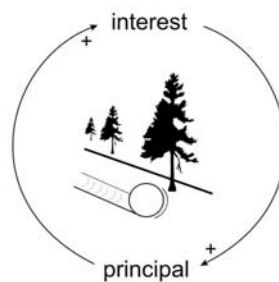

Figure 1. Reinforcing loop.

For example, in a bank account, as principal increases, it generates more interest, which in turn adds to the original principal, which in turn leads to even more interest, and so on. A "snowball rolling down a hill" symbol in the center denotes a reinforcing loop, to remind readers that there is an exponentially growing cycle. Reinforcing loops have inherent limits to growth, usually because one of the elements interacts with another loop to eventually slow growth.

The other key feedback loop is called a "balancing loop." A balancing loop describes efforts to solve a problem or close a gap between a desired state and a current state (Figure 2).

Lieutenant Colonel Jim Baker is a recent graduate of the National War College. He currently works on the staff of the UnderSecretary of Defense for Acquisition, Technology and Logistics. He holds Master's degrees in Electrical Engineering, Systems and Industrial Engineering, Military Operational Art and Science, and National Security Strategy.

The balancing loop is read from bottom to top in the order of the arrows: an action is taken to increase a current state. The "+" sign indicates an increasing relationship. This results in some closing of the gap with the desired state (the minus sign indicates an inverse relationship between elements). As the gap grows smaller, it adds to the desire for action, but it adds less and less as the gap shrinks, causing a slowing change in the current state, until the gap reaches zero, and no further action is required. If the desired state changes, or if an event occurs to change the current state and recreate the gap, action to balance the gap would begin again. The see-saw symbol in the middle indicates a balancing loop.
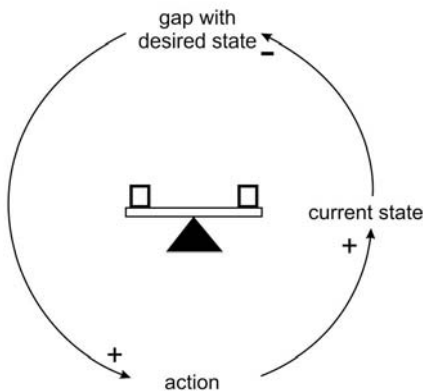

Figure 2. Balancing loop.

Although appearing abstract, the balancing loop describes a great many everyday processes. Consider filling a glass with water. The desired state is the water fill line, the current state is the level of the water, and the gap is the distance between the two levels. The gap is at its maximum with the glass empty, so you turn on the faucet with near full intensity. As the water fills the gap closes, you slowly turn down the water and the intensity of the action slows, until the glass is filled and the gap equals zero. If you put a hole in the glass, the gap would reappear and you would turn on the faucet again, with strength proportional to the loss. Systems thinking also emphasizes the time delay often inherent between action and current state, and how this may lead to inappropriate action. For example, if you inserted a two-second delay between the time you turned the faucet and the time the water came on, you would probably miss the fill line. Delays of hours or days in more complex systems often cause unforeseen consequences as actions tend to lead the system to exceed the desired state.

Fixes That Fail

A simplified systems thinking model based on the balancing loop for a counterinsurgency strategy looks like Figure 3. This is a simple loop, but it

contains the key element of counterinsurgent strategy: decreasing popular support for the insurgent. Most theorists agree that reducing popular support for insurgents is the single most critical element confronting an insurgency. In the model reflected at Figure 3, driving the gap to zero is a problem addressed by the balancing loop. This challenge preoccupies the counterinsurgent strategist, and forms the theme for several extensions of the model.
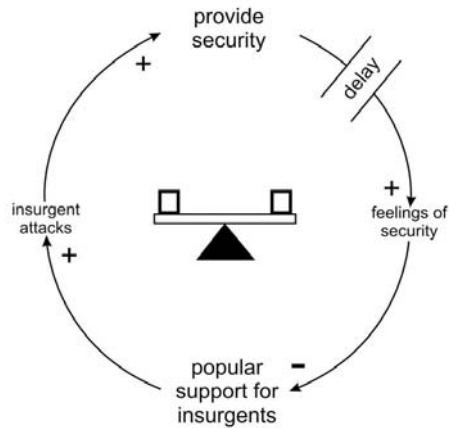

Figure 3. Provide security balancing loop.

Before examining this model further, it is important to clarify the term "popular support." It does not necessarily mean that the insurgents and their actions are welcomed by the population. As often as not, apathy, fear or coercion is the motivator for popular support. Regardless of motive, actions arising from that support promote the insurgency. Typical support includes providing intelligence on counterinsurgent operations to the insurgents, allowing sanctuary, harboring supplies or ammunition, and supporting new recruits. Each of these actions provides more opportunity for insurgent attack, and increases the likelihood attacks will be successful.

Working around the loop in Figure 3 starting from the bottom leads to the following chain of reasoning: popular support for the insurgency leads to increased or more effective insurgent attacks. Increased attacks encourage government forces to conduct some type of security response. Typically, this might involve cordon operations, establishing checkpoints, setting up roadblocks, establishing a curfew, or perhaps even search and destroy operations. These actions result in fewer insurgents, weaken their ability to attack effectively, and therefore increase feelings of security in the populace. There is, however, a delay from the initial security action and the impact on insurgents and the corresponding increased feeling of security. It takes time for the populace's state of mind to adapt.

Recall that the negative sign on the arrow between "feelings of security" and "popular support" means an inverse relationship—as the population feels more secure, support for the insurgents decreases. As popular support wanes, insurgents eventually have difficultly finding a safe haven to plan or train, garnering supplies or recruits, and collecting intelligence about counterinsurgent forces. Lack of these resources diminishes the insurgent's ability to attack. This, in turn, means that the intensity of insurgent attacks and corresponding government security measures also decrease or become less onerous. Eventually, all popular support dwindles—or so the reasoning would seem to indicate. Providing security is typically the first action counterinsurgent forces tend to adopt. Without security, other elements of counterinsurgency strategy simply cannot be brought into play.
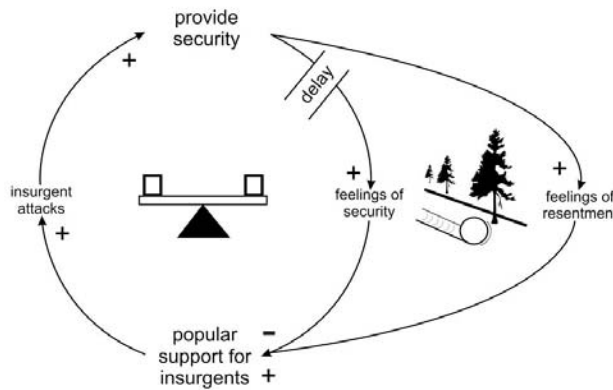

Figure 4. Extended provide security model—why the fix fails.

There is another reason for a preference for "providing security." Taking direct action against insurgents appears to satisfy the need for solid results in a short period of time. It is analogous to the classic tasks most conventional armies train for—finding, fixing, and destroying the enemy. The balancing loop provides a key insight: the action and its result take place in a relatively compressed period, making it seem as though this is simply an engagement in a larger campaign. It appears straightforward to measure success in terms of dead or detained insurgents, and captured weapons, supplies, or territory. Certainly, this appears to be the most appropriate initial response to insurgent attacks and, perhaps, the best way to "drain the swamp" in an effort to avoid future violence.

Unfortunately, the balancing loop is a fix that often fails.[2] An updated model incorporating the typical arguments found in counterinsurgency literature is shown in Figure 4.

Here, the "provide security" action not only increases feelings of security, but it also increases feelings of resentment. Kicking in doors of suspected

insurgent hideouts, enforcing curfews, conducting block-by-block searches, rounding up villagers to find the few insurgents—all of these necessary tactics inevitably lead to increased rancor in the population.[3] Indeed, polls of Iraqis report nearly an equal balance between those who have had positive experiences and those who have had negative interactions with US forces, even though a much smaller percentage of the population is the target of actions related to "provide security."[4] The intensity of these negative feelings vary according to the cumulative effect of perceived or actual grievances—from minor cultural slights to major property damage, to inadvertent casualties and deaths. Even when forces are highly discriminate in their use of force, lack of cultural training or familiarity with the local environment, or the use of derogatory language or gestures may contribute to discontent. As a result, at the critical juncture at the bottom of the loop in Figure 4, there is a positive force (resentment) working against the reducing force (feeling secure) to change insurgent popular support. Note in the outer reinforcing loop actions and consequences tend to strengthen one another, and work to undermine the inner balancing loop. In other words, actions taken to "provide security" as a solution may simultaneously act to intensify the problem.

For the counterinsurgent strategist, this second model raises several key questions. Will "provide security" tactics lead to changes in the security environment quickly enough? What is the best method to shrink the delay between actual changes in the security environment and the perception of security? Will the resulting feelings of security for the population increase faster than any growth in feelings of resentment? Will the relative intensity of these factors be sufficient to increase or decrease popular support for insurgents? Even if these questions can be answered satisfactorily, another more troubling aspect remains; it does not take significant popular support to enable insurgencies, so even small pockets of support can be problematic. Answering these questions is further complicated by a lack of appropriate metrics to judge such matters.

The outer reinforcing loop in Figure 4 also has a time duration that will be considerably shorter than the inner balancing loop. Feelings of resentment tend to grow more rapidly than feelings of security. The general populace, especially in an insurgency where the security forces are not indigenous, will quickly feel anger at real or perceived slights. Feelings of safety from increased security, are not as obvious. They can also be more quickly reversed by insurgent actions. Taken together, the fact that a new security environment is in place takes longer to seep into a mindset. The result all too often is an upswing in popular support for insurgents after initial security measures are instituted. The model thus emphasizes another central tenet of counterinsurgent doctrine: the importance of restraint in the use of force.

Indeed, the central challenge of the "providing security" element for the counterinsurgent is to weigh the competing moods of the population against

options for action. Restrained force slows down the development of feelings of resentment, but also slows any direct action to affect the situation. Military commanders have a problem explaining rules of engagement (ROE) that limit the employment of force. ROE which limit kinetic responses in order to establish a more amiable environment probably risk increasing their own casualties. Yet, the environment becomes only more hostile if ROE allow for a more direct response. This is the dilemma the model exposes: units may be asked to be more vulnerable (in the short-term) in order to reach the longer-term goal of decreased popular support for the insurgents. Yet, this difficult to measure goal is much harder to recognize than, the clearly necessary response to a sniper firing from a mosque. There is no such thing as "low intensity conflict" for the soldier being shot at. Taking casualties for abstract gains undermines unit morale. It is therefore unsurprising that as late as April 2004, 11 months after Saddam Hussein's regime had fallen, British observers noted of US tactics in Iraq:

> The American approach was markedly different [from the UK]: When US troops are attacked with mortars in Baghdad; they use mortar-locating radar to find the firing point and then attack the general area with artillery, even though the area they are attacking may be in the middle of a densely populated residential area. They may well kill the terrorists in the barrage but they will also kill and maim innocent civilians. That has been their response on a number of occasions. It is trite, but American troops do shoot first and ask questions later.[5]

The quote fails to characterize the rectitude displayed by Western military forces in a majority of counterinsurgency cases. As the systems thinking model in Figure 4 highlights, the insurgent takes advantage of the core dilemma for the counterinsurgent—walking the fine line between too forceful and too limited military actions related to security.

The first goal for the insurgent is to exploit insufficient security actions by employing more numerous and possibly more effective attacks. At the same time, he tries to fan the flames of resentment of any overzealous use of force, magnifying its effect with rumors or innuendo. The insurgent benefits from the human tendency to assume the worst and to equate perception with reality. Even small-scale insurgent attacks or assassinations that do not significantly increase individual risk will have a disproportionate impact by frightening or coercing the population. Moreover, localized errors by military forces in employing force—especially when that force is viewed as an occupier—can be leveraged to increase "man on the street" bitterness. Both these actions help to increase popular support for the insurgent.

Through the mediums associated with globalization, the 21st century insurgent has the ability to magnify this already potent advantage. The explosion of information technology, communications pathways, television,

and the rise of the internet increase the insurgent's ability to leverage minor tactical successes into strategic information advantages.[6] Improvised explosive devices and suicide attacks (and the footage that often accompanies them, deliberately taken by insurgents) may be quickly and easily distributed worldwide by mainstream journalists or individuals. These images of violence have an impact disproportionate to the actual military value of the attacks, exacerbating the challenges illuminated by this model.

Regardless of the tactics used to combat these challenges, the need to provide security action is clearly necessary. However, even if the issues associated with the model are being met, they are often not sufficient to counter the insurgency. The other critical function is the increase in government legitimacy. Adding this element to the model is reflected in Figure 5.
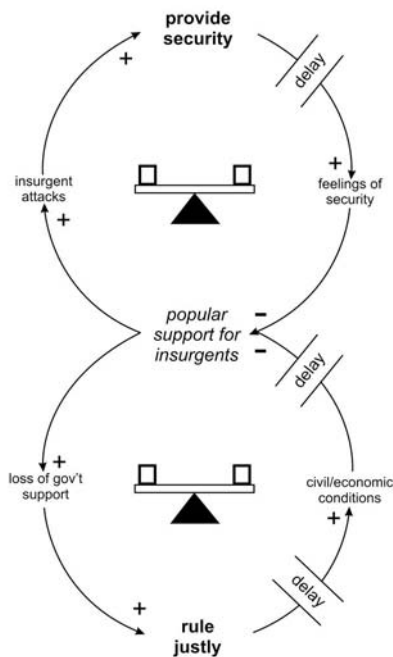
Figure 5. Systems model for two key aspects of influencing popular support.

The top loop is repeated from Figure 4. The bottom loop reflects the second major effort of a counterinsurgency strategy, namely increasing broad government legitimacy. This loop would be read from the top as follows: increasing popular support for insurgents decreases support for the government. This can be reflected in actions ranging from failure to volunteer for local government, to pay taxes, active civil disobedience, or the loss of administrative control of territory. The government attempts to "rule (more) justly," to woo the populace by redressing the most severe of the perceived

popular grievances. Resolution of these grievances are assumed to result in better economic or civil conditions for the population as a whole. These actions increase real or perceived government legitimacy, thereby reducing popular support for the insurgents. Legitimacy also comes from increased security for the population, but this arrow is deleted for clarity.

This sense of the element "rule justly" implies a Western interpretation of the rights and status of the individual versus the state. Other government models such as limited authoritarianism or totalitarianism may function more effectively in a counterinsurgency, for a variety of reasons concerning the relative power of the state.[7] These forms of government and their sometimes brutal but occasionally effective means of combating insurgents are beyond the scope of this article.

The delays in this balancing or problem-solving loop again show why a preference for military action may be strong. Since there must have been perceived injustices of one sort or another for the insurgency to take hold, "ruling justly" is not a transformation that can take place quickly. In the absence of a functioning local government, it will take even longer for an occupying force to establish good governance. "Ruling justly" involves many tasks, such as delivering basic social and physical services, setting up functioning courts, organizing local or national elections, holding referendums and establishing political councils, and encouraging the growth of a free press. It may also reach the point of political accommodation with elements of the insurgency, as was the case in Northern Ireland, El Salvador, and reputedly in Iraq today. Ruling justly is a long-term achievement, and there are anticipated delays throughout the process—delays in bribing (coercing or convincing elites holding power to support the government), delays in training technocrats, delays in building physical infrastructure, and delays in creating and executing new bureaucratic processes. Once these activities are started, additional delays can be expected as positive actions slowly take effect, and then continue to lag while portions of the population who are suspicious or apathetic are convinced to actively oppose the insurgency. Frustration with delays (on the part of the government and the population) often leads policymakers to reach for the tool with the most short-term impact, "provide security."

In spite of these difficulties, the model in Figure 5 demonstrates to struggling officials that "ruling justly" is not a mere moral concern, but also a highly practical one. As a population becomes convinced of the just rule of their government, their support for the insurgency drops, it is then that the counterinsurgency can succeed. At the same time, occupying forces should also bear in mind that "ruling justly" represents a spectrum of activities, some of which may not be consonant with Western notions of fair and just government. If a power holding elite (warlord) can provide some level of security and

basic infrastructure (food, water, shelter, and power) to a majority of the populace, he may be extremely useful in the early phases of the counterinsurgency. "Ruling justly" may eventually come to mean constitutional liberalism, but in the short-run, the model suggests a strategy of co-opting small tyrants or elites early; through elections if possible, but through pure power brokering if not. This contribution to overall stability may be far more important than implementing idealistic notions about an effective national government. The creation or transition of institutions to support this goal are subject to all the delays noted previously; all the while government legitimacy may be eroding. However, because it is the surest route to eventual undermining of popular support for the insurgent, a strategy of governing well—or at least the appearance of governing well—satisfies both the idealist and realist policymakers.

The model can be expanded in two ways to show another reason why counterinsurgency strategy is difficult to maintain. Consider the following diagram, modified again from Figure 4.
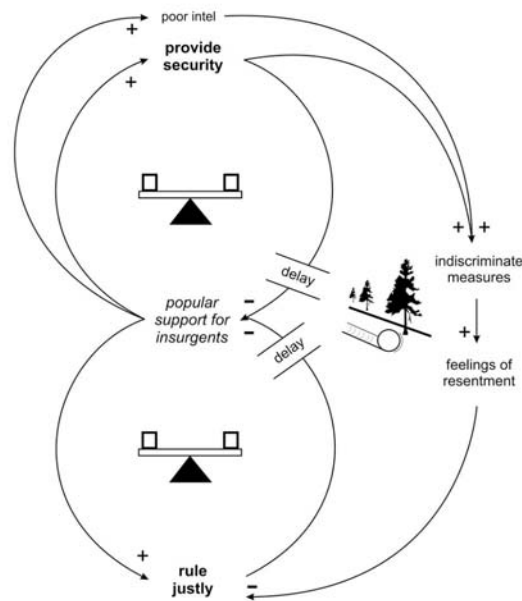
Figure 6. Extended systems model for counterinsurgency showing how (ruling justly) can be undermined by shorter term (provide security) measures.

In Figure 6, the two inner balancing loops remain unchanged, but an outer reinforcing loop has been added. This loop reflects two important aspects of counterinsurgent strategy. As popular support for the insurgents' increases, intelligence sources directed at the insurgency diminish. This means that the

opportunity for targeted, selective action become rarer, which when combined with outcomes of "provide security" may lead to an increase in indiscriminate military actions. As UK counterinsurgency theorist Alistair Finlan notes:

> Throughout mid-2003, US forces [in Iraq] engaged in a number of dragnet or sweep operations that involved house searches, mass arrests and detention of suspected insurgents. The problem with such operations was that they were imprecise, offensive (unpopular foreign troops searching any house in the dead of night from Boston to Belfast or Baghdad would generate anger amongst civilians no matter what nationality) and counter-productive. Instead of isolating the resistance, such activities have "perversely inspired insurgent violence."[8]

These actions provide further opportunities for fostering the feelings of resentment among the general populace. Instead, the counterinsurgent should strive to create the opposite effect by increasing security that ultimately will undermine support for the insurgent and result in better intelligence. Andrew Krepenevich, long-time observer of the war in Iraq, notes that "the insurgents' problem is . . . compounded if the people feel secure enough from retribution to provide counterinsurgent forces with intelligence on insurgent movements and cadre members."[9]

Also, this expanded model shows how feelings of resentment work to undermine the ability of the government to rule justly. In Figure 4, feelings of resentment directly led to an increase in popular support. The model in Figure 6 makes the cause-effect relationship more explicit. No matter how specific a population's discontent may be toward the military, ultimately, they hold a government responsible. Again, it is the perception as much as the reality of good governance that is needed to counter insurgent support. And effective propaganda can also help reduce the delay, by increasing the perception of just rule in the minds of the populace, giving reality a chance to catch up.

The model in Figure 6 argues for several other points besides restraint in the use of force. It suggests combining the civil and military authorities at the local and national level, as demonstrated by the Combined Action Platoon programs in Vietnam and Afghanistan. Such units can share intelligence among civil and military personnel, but more importantly they strike a balance between coaxing and provoking the population while providing security, keeping the focus on "ruling justly." The Marine Corps' *Small Wars Manual* reflects this environment:

> The initial problem is to restore peace. There may be many economic and social factors involved, pertaining to the administrative, executive, and judicial functions of the government. These are completely beyond military power. . . . [but] Peace and industry cannot be restored permanently without appropriate provisions for the economic welfare of the people.[10]

Local and national politicians are more sensitive to the social and political realities caused by the inappropriate or unsystematic use of force than a military unit—and thus more responsive to the popular reaction. They are better suited to "feel" out the situation on the ground, judge the strength of the players, and better able to coordinate responses, figure out the worst grievances and try to redress them. The *Small Wars Manual* reinforces the importance of indigenous and responsive local officials:

> In general, [any] plan of action states the military measures to be applied, including the part the forces of occupation will play in the economic and social solution of the problem. The same consideration must be given to the part to be played by local government and the civil population. The efforts of the different agencies must be cooperative and coordinated to the attainment of the common end.[11]

These four models illuminate several fundamental considerations for the counterinsurgent. They confirm the ideal strategy is restraint in the application of force through a combined military-civilian organization working in small teams close to the affected populations. They emphasize the role of intelligence in providing specific targeting and the avoidance of large operations. The models stress the constant delay between action and reaction, explain the frustrating, protracted and ambiguous character of most counterinsurgencies, and they suggest that in the short-term, information operations can assist in closing the legitimacy gap.

Taken in total, they highlight why there is an ever-lurking temptation to resort to more direct action in an effort to demonstrate progress. As counterinsurgent practitioner Larry Cable succinctly notes:

> Without a doctrinal recognition that results will inherently be ambiguous, indicators hazy and results seemingly quite slow in coming, commanders and decision-makers alike will cast about for ways in which to convince themselves . . . that US forces are succeeding. [Any strategy] . . . must provide for a uniquely un-American attribute: the ability to accept a wide range of outcomes and complete uncertainty as to the duration of our effort or even the short-term effectiveness of our actions.[12]

The models also support committing a greater amount of resources to providing security. An appearance of strength and unshakeable permanency can increase feelings of security without the concomitant increase in feelings of resentment. The models counter actions that undercut the perception of government impartiality between factions, and the associated increase in popular support for the insurgent.[13] In short, the model literally and figuratively centralizes the criticality of winning the hearts and minds of the popu-

lation in support of the legitimacy of the government, conforming with the conclusions of relevant counterinsurgency theorists.[14]

Some critics may charge that systems thinking is inappropriate to the task of understanding or analyzing the basics of counterinsurgency strategy. After all, feedback loops related to examples like "filling up a glass of water" cannot account for the intricate, challenging, unique, and sometimes messy business of counterinsurgency. How can a model account for an active, thinking, imaginative enemy whose moves and countermoves can hardly be predicted or anticipated? This criticism carries some weight. One response might be that systems thinking has proven useful in understanding other complex societal and organizational behavior. Therefore, its lens may be useful even in such problematical contexts as small wars. A second and more potent rejoinder to the criticism would be to point out that classic counterinsurgency strategy is well understood, and as the previous analysis shows, the model represents key elements of successful past strategies. The most potent counter-argument is simpler: the model is based on the key objective that both insurgents and counterinsurgents universally agree is critical— popular support. In this way, the insurgent's strategy is as clear as the counterinsurgents, though his tactics or techniques may be distinct.

Another criticism may be that this model reveals nothing new. However, having a model in-hand allows the counterinsurgent strategist a means to steady himself and his forces in times of difficulty as well as explain to others why the strategy he has adopted will work. This is no small accomplishment. Military philosopher Carl Von Clausewitz said:

> The means and forms which strategy uses are in fact so extremely simple, so well known by their constant repetition, that it only appears ridiculous to sound common sense when it hears critics so frequently speaking of them with high-flown emphasis.[15]

Although Clausewitz was not talking specifically about small wars, a similar observation can be made for counterinsurgency strategy—the basics are well known and almost universally applicable. The difficulty is often staying the course. This model represents the non-linear nature of counterinsurgency, the ability to calm policymakers and the public, and to underscore the need for patience.

Metrics for Success

Having an understanding of why things happen is the foundation of a good strategy. Determining ways to measure success in the midst of a counterinsurgent campaign is much more difficult. There are no phase lines, no geographic decisive points, and oftentimes little information regarding the en-

emy's resources or will. However, this same simple model and the insight it can provide suggests some preliminary metrics. These indicators can be roughly grouped into the two key aspects of highlighted in the model—"provide security" and "rule justly." In addition, strategists may find it useful to consider these potential measures from two perspectives. First, they might classify the component *nature* of the insurgency confronted: whether it is operating in a rural or urban environment will guide selection of some measures. Second, they should be aware that some measures while indicating the current status of an insurgency, others may be giving some hint of what the future will likely be—these will be referred to as *lagging* or *leading* indicators. Finally, US counterinsurgents should be preoccupied with several overriding concerns about measures in general, and keep these in mind when selecting indicators.

Urban and rural insurgents have similarities and differences. Rural based insurgents typically have greater ease in massing and dispersing units and in using the countryside as sanctuary. They may find it easier to attack remote outposts and villages. They may also overtly take control of portions of the country, and set up shadow governments to increase their legitimacy, such as collecting taxes or providing public services. The rural-based insurgent trades time for space. The typically successful counterinsurgency strategy is to limit insurgent movement by building roads or fortifications to partition the countryside. An "oil spot" strategy is applied to gradually clear areas of insurgents and ensure forces left behind can hold the area against any resurgence of activity. In some cases, it may even include complete resettlement of populations. Measures should focus on these unique characteristics.

Urban-based insurgents, working in the alleys and slums of unimproved urban spaces, are just as difficult for military forces to engage as the rural guerilla hiding in the mountain or jungle. There is, however, easier access to soft, infrastructure targets and the ability to manipulate crowds.[16] Urban insurgents have greater access to media—a strategic advantage. Urban economic networks also provide opportunities for collecting income through drug trafficking or extortion. The urban insurgent cannot easily mass forces, and must depend on small cells.[17] The fact that keeps urban insurgencies small also negatively impacts the government forces, since they have a greater challenge finding the enemy. The counterinsurgent cannot easily mass force and may inadvertently cause civilian deaths in any action. Politically, denying freedoms such as assembly, speech, press, or movement tends to punish large segments of the populace in attempts to pursue the few. As we have seen, repressive strategies can lead to increased and more widespread resentment of the government, playing into the hands of the insurgent. Good counter-strategies include increased patrols and policing, emphasis on intelligence, establishing checkpoints, crowd dispersal, redress of popular grievances, and eventual political reconciliation. However, it

is the limited insurgent's inability to affect mass uprisings that causes urban insurgencies to fail more often than their rural counterparts.[18]

Both of these forms depend on weakening the patience of the government or occupying force, bringing about either their overthrow or a change in power. They avoid military decisions and conventional firefights wherever possible. Both depend critically on indigenous popular support. These forms may also extort money, food, or supplies from their population in return for protection. They may also seek to supplant the legitimate government by providing basic services like education or medical assistance. As the system dynamics model showed, counterinsurgent strategies also have much in common: highly discriminate use of violence, coordinated civil and military action, and the ability to provide political paths for change while redressing grievances.

Another way of organizing measures of progress is to examine whether they indicate a future change in progress, or serve to document a change that has already taken place. The former is called a "leading" indicator, while the latter is a "lagging" indicator. Leading indicators forecast progress. Lagging indicators confirm whether existing strategies are working.

One example of the difference between the two might be trying to measure the progress in delivering educational services to a population. Leading indicators would include number of schools built, number of teachers hired and trained, and the number of students enrolled. As these numbers go up, the potential for reaching the goal of improving education is increased. Hopefully, these indicators serve to forecast potential outcomes and highlight problems early enough to make the required course corrections. Lagging indicators for a similar goal might include the latest exam test scores, literacy rates, and the number of students matriculating. The numbers prove after the fact that the strategy worked. Both types of indicators are needed to affirm if the right strategy has been chosen to meet the goal of improving a populace's education.

There are, however, two key advantages to using a leading indicator. These advantages derive from the ability to measure capacity and potential rather than results. First, the indicator provides an early assessment of results with sufficient time to make changes. A counterinsurgent might need to modify the goals or add resources depending on this early insight. The counterinsurgent also could use early measures to calibrate popular expectations for on-going security or governance programs. Second, early indicators give a policymaker a validation that some kind of progress is being made. Counterinsurgencies do not progress smoothly, and it is often difficult to sense whether progress is being made. As noted previously, this can lead to lack of patience, resulting in ill-conceived actions undoing a successful counterinsurgency at both the tactical and strategic levels. Having measures in hand early on permits public officials and military commanders to demonstrate to themselves, their

subordinates, their supervisors, the media, and the population at large that progress is being made. Or, more honestly, it demonstrates that the strategy has potential for progress. Being essentially predictive, many things can go wrong between the time an indicator presages a likely outcome and the actual fruition of results. This is the key disadvantage of the leading indicator.

When properly chosen, lagging indicators prove the viability of assumptions made in the choice of leading indicators. By measuring a project or activity "as-is," lagging indicators have the advantage of more directly measuring the desired outcome. Their drawback, however, is that they come so late that any modifications made to the strategy at that point may require an extended period to make their impact felt. Good counterinsurgent strategists should rely on both leading and lagging indicators, bearing in mind the implicit assumptions of the former, and the temporal disadvantages of the latter.

Strategists should also be concerned about three "snares" they may encounter in choosing indicators. The first of these snares, as noted above, is that leading indicators will have built-in assumptions about both progress to date and progress yet to be made. For example, predicting educational progress by measuring the number of schools built assumes that a new building is required for learning. Progress towards an educational goal also assumes that the schools will be have a sound curriculum, sufficient teachers, and sufficient security to ensure a good learning atmosphere. These are significant assumptions. Even the mere act of constructing a lagging indicator (without sufficient data) may reflect the reliance on such assumptions. With a leading indicator in-hand, fixing in mind the eventual outcome and determining how best to measure it often brings to mind the other required conditions.

Second, leading indicators tend to become input or resource based. Inputs to a system are usually the easiest to measure, and a correlation is usually assumed between input and output. Both of these factors contribute to the heavy use of input-based measures that may have only an indirect bearing on the system as a whole. An example of this phenomenon in counterinsurgencies is a "body count" mentality. That is, the key to measuring strategic success is that fewer insurgents (input) must mean fewer insurgent attacks (output). Yet, in this example, the would-be strategist has made two key assumptions that may prove to be untrue. The first being that more insurgents are being killed than are being replaced by whatever government tactics employed. Second, that fewer insurgents means fewer attacks. Both are often false assumptions, as in the case of Iraq today and Vietnam a generation ago. It would appear that in Iraq, thousands and thousands of insurgents have been detained or killed since the end of major combat operations.[19] However, the estimated strength of the insurgency has remained steady since May 2004, and the number of attacks per month continue to rise.[20] Clearly, measuring resources does not necessarily in-

dicate progress. Nevertheless, if something is easy to measure, be assured that it probably will be.

There is a third concern about measurements in counterinsurgencies. The staff officers at various headquarters and developmental agencies can generate reams of quantitative measures. One should not judge the success of a counterinsurgency, the mood of a society, its potential for violence, or its ability to resist an insurgency solely on "the top 10" indicators and their red, yellow or green status as outlined by some technocrat or think tank. That is not to say that objective indicators are not critical. They form a basis for demonstrating progress for media, for popular consumption, and above all provide basic information ensuring that the project is delivering a tangible result. However, quantitative data may not be sufficient to judge the degree and intensity of popular feeling, or more importantly, the way that these feelings are distributed throughout geographic or demographic strata. One way systems typically compensate for a lack of hard data and clear cause-effect relationships is to increase the human dimension used to interpret the situation. For counterinsurgent strategists, this could equate to longer troop rotations and more engagement with the local populace. Personal judgment and intuition borne of close continuing ties with the populace permits a useful view of the moods of various elites or the general populace. Numbers must be balanced by informed, interactive human judgment. Western positivist culture tends to subscribe to legendary Vince Lombardi's claim "If you're not keeping score, you're not playing to win." However, qualitative measures may play an equally important part. Measures should be developed based on the dominant character of an insurgency (rural/urban/both), and by whether they are able to predict or confirm progress.

Conclusion

This article has introduced an analytic framework for understanding the dynamics of counterinsurgency, and suggested considerations for how to measure progress. Hopefully, it has demonstrated that winning on the battlefield is irrelevant. When countering an insurgent adversary, the struggle for power and legitimacy among competing factions has no pure military solution. Often, the application of force has the negative, unintended effect of strengthening the insurgency by creating martyrs, increasing recruitment, and demonstrating the brutality of government forces. An alternative approach to fighting an insurgency involves a comprehensive plan to alleviate the political conditions behind the insurgency; civil-military cooperation; the application of minimum force; deep intelligence; and an acceptance of the protracted nature of the conflict.[21] All of these factors arise from considering

the two major motivations for insurgent action—"providing security" and "ruling justly." The insights revealed by this simple model can help steady the decisionmaker in times of difficulty and assist in determining indicators for success.

NOTES

1. In spite of thousands of papers and hundreds of books of examples of applied systems thinking to other fields of hard and soft science, the author was unable to find any published examples of systems thinking as applied to insurgency or counterinsurgency strategy. The closest is found in a recent grant application filed from the Massachusetts Institute of Technology Sloan School on "Research Initiative to Understand & Model State Stability: Exploiting System Dynamics," February 2005, http://web.mit.edu/smadnick/www/wp/2005-02.pdf.

2. Systems thinking has developed a number of archetypes, or recurring combinations of reinforcing and balancing loops that appear over and over again in the examination of systems. Some patterns occur often—one of which is the archetype "Fixes That Fail."

3. USMC, *Small Wars Manual* (Washington: US Government Printing Office, 1940), chap. 1, sect. 2, 15. "While curbing the passions of the people, courtesy, friendliness, justice, and firmness should be exhibited."

4. Oxford Research International, Ltd. *National Survey of Iraq*, February 2004, p. 26. Eleven months after regime change, 8.4 percent of Iraqis had a positive experience with US forces, 9.3 percent had a negative experience.

5. Sean Rayment, "US Tactics Condemned by British Officers," *The Daily Telegraph*, 11 April 2004.

6. John Mackinlay, "Defeating Complex Insurgency: Beyond Iraq and Afghanistan," The Royal United Services Institute, Whitehall Paper 64, 2005, pp. 10-13.

7. Consider for example, several regimes in Latin America, such as El Salvador or Guatemala. Jennifer Schirmer, *The Guatemalan Military Project: A Violence Called Democracy*, p. 158: "[there was a period of] . . . political violence [against insurgents] by special commandos . . . acted under government control, but outside the judicial process to abduct, torture during interrogation and extra judicially execute thousands. . . . [According to one government official] this was the beginning of an epoch of "good intra-group relationships and the most successful in combating urban insurgency."

8. Alastair Finlan, "Trapped in the Dead Ground: US Counter-Insurgency Strategy in Iraq," *Small Wars and Insurgencies*, 16 (March 2005), 1-21.

9. Andrew Krepenevich, "Training Iraqi Security Forces," FDCH Congressional Testimony, House Armed Services Committee, 17 March 2005.

10. *Small Wars Manual*, p. 16.

11. Ibid.

12. Larry Cable, "Getting Found in the Fog: The Nature of Interventionary Peace Operations," *Small Wars and Insurgencies*, 7 (Spring 1996), 107.

13. Ibid., p. 105.

14. Ibid., p. 98.

15. Carl von Clausewitz, *On War*, trans. and ed. Michael Howard and Peter Paret, (Princeton, N.J.: Princeton Univ. Press, 1984), p. 178. Clausewitz explains several reasons why this is so: that few generals or statesmen possess the combination of intellect and iron will to stay the course in the face of danger and uncertainty. Another reason being that few commanders possess the coup d'oeuil needed to weigh appropriately the combination of effort and will versus that of the enemy to accomplish the goal. Finally, that friction throughout the military machine makes it likely that the best of plans will go awry or be delayed, and that there is a need for fortitude and creativity in such times.

16. Marshall V. Ecklund, "Task Force Ranger vs. Urban Somali Guerillas in Mogadishu: An Analysis of Guerilla and Counterguerilla Tactics and Techniques used during Operation GOTHIC SERPENT," *Small War and Insurgencies*, 15 (Winter 2004), 49.

17. Jennifer Morrison Taw and Bruce Hoffman, *The Urbanization of Insurgency: The Potential Challenge to US Army Operations* (Santa Monica, Calif.: Rand Corporation, undated), p. 10.

18. Ibid., 18.

19. The Brookings Institute, "Iraq Index: Tracking Variables of Reconstruction and Security in Post-Saddam Iraq," 21 November 2005, http://www.brookings.edu/iraqindex, p. 15. This collection of statistics is taken entirely from open sources; some of the figures appear to be more reliable than others.

20. Ibid., 28.

21. Montgomery McFate, "Anthropology and Counterinsurgency: The Strange Story of their Curious Relationship," *Military Review* (March/April 2005), 27. This approach was adopted by the UK with regard to the IRA.