

Indicators of Success in Compliance and Peace Building

The late Rear Admiral Gary Wheatley USN (Ret.)

Evidence Based Research Inc.
Vienna, Virginia, U.S.A.
e-mail: wheatley@ebrinc.com

Rear Admiral Gary F. Wheatley USN (Ret.) is a Program Manager at Evidence Based Research (EBR), specializing in information warfare, command and control, and advanced technology studies. A former carrier aviator and Navy test pilot, his significant active duty assignments included command of a Carrier Air Wing and the aircraft carrier USS John F. Kennedy. As a Flag Officer, he served as Director of Operations, Command and Control for the Atlantic Command and Atlantic Fleet, and also as Commander Task Force 84, the Atlantic Area Anti-Submarine Warfare Command. Since leaving active duty, he has specialized in advanced technologies, and command and control. As a Senior Fellow at the Hudson Institute, he analyzed the operational implications of a distributed surveillance satellite system. Admiral Wheatley graduated from the U.S. Naval Academy. He later attended the Industrial College of the Armed Forces, concurrently earning an MS in Management from George Washington University, and attended Harvard University's Advanced Management Program.

ABSTRACT

Peace operations, like other endeavors, require analysis of how well the operation is progressing. However traditional analyses methods for progress and success often fall short when applied to peace operations. One possible solution is available in the context of Effects Based Operations (EBO). EBO is the result of conceptual research conducted by the US Joint Forces Command Concept Department. In this concept, emphasis is placed on achieving a desired effect rather than on the means used to achieve that effect. The influence of all elements of national/coalition power is evaluated to achieve a desired end state. In particular, analyses of Effects Based Operations and their results (as opposed to military-only, kinetic options) have become an important umbrella concept, which has direct relevance to peace operations.

The kinds of metrics needed for analysis of compliance and peace building are often different than those traditionally used in used in other types of operations. Effects based approaches offer a way to overcome this difficulty. Desired end states are described in the context of creating effects that occur in a complex adaptive system that responds to these inputs over time. There is seldom a direct cause and effect relationship and success indicators may well evolve and change over time. To be relevant the indicators need to show progress along a causal path of transition to the next desired state. Indicators of non-success (or failure) are also needed to alert about possible unintended consequences. The indicators are only relevant in context and each case is scenario-specific.

This paper discusses the EBO concept and its application to peace operations. It also draws on work recently completed by the Military Operations Research Society (MORS) workshop on EBO in which the author chaired the “Indicators of Success” working group. The paper will also provide an illustrative example of effects based indicators of success in the context of a peace operations scenario.

THE EBO CONCEPT

The U.S. Joint Forces Command, Joint Futures Laboratory has been charged to lead the transformation of America’s military through joint experimentation. As part of this effort, the concept of effects-based operations was born from a need to meet the demands and manage the environment of the 21st century, which includes globalization and its impacts, and various forms of conflict across most of the conflict continuum. This continuum of conflict is illustrated in Figure 1.

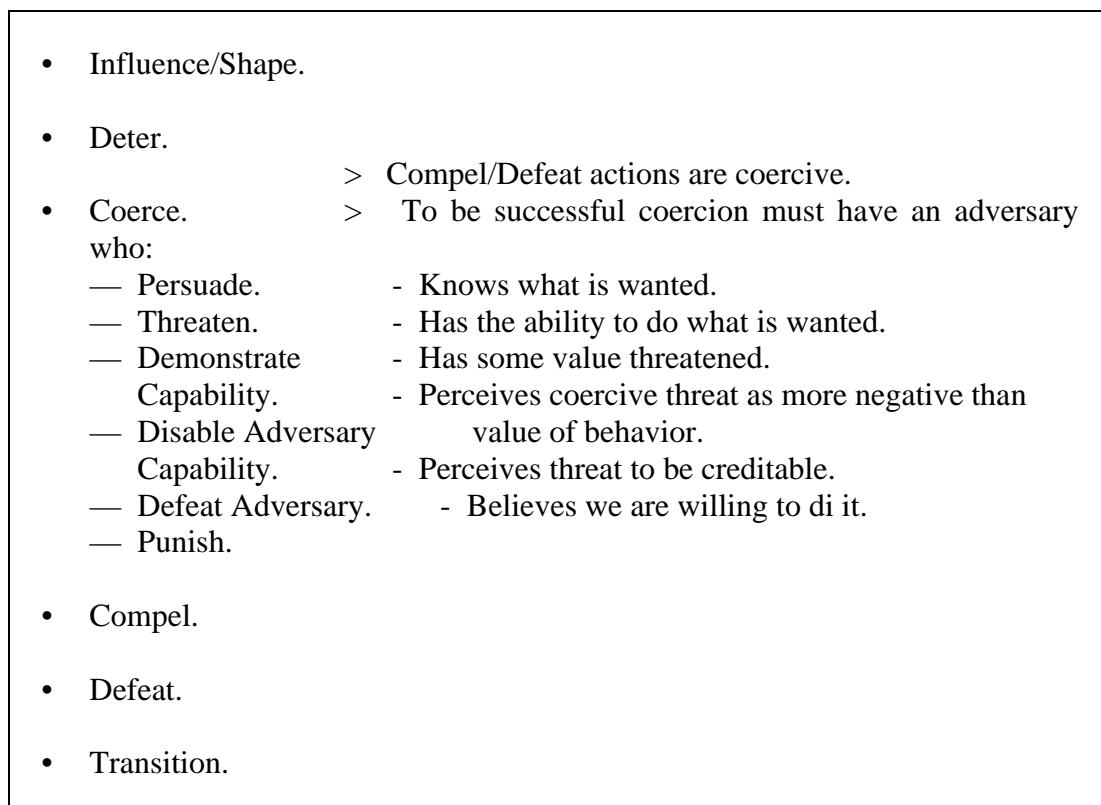


Figure 1: The Continuum of Conflict.

Peace operations span the continuum from “influence” to “compel” (e.g., Peace Enforcement). This paper focuses on peace support and discusses the concept of EBO as it applies to Indicators of Success in these operations.

Understanding how effects-based operations enhance traditional objectives-based and intent-based approaches is key to understanding the value of conducting operations from an effects-based perspective. An objectives-based approach relates clearly stated objectives to proposed actions, and then refines the relationship in operational plans through a strategic

objective-to-task linkage. An objectives-based approach focuses on the intended results or outcomes of actions. An intent-based approach is then an enhancement to the objectives-based approach. The commander's intent describes the task—the action to be taken, as well as the intent—the desired result of the action. The commander's intent conveys the commander's vision. An understanding of the commander's vision guides the actions of subordinates and enables subordinates to exercise initiative in harmony with the commander's desires.¹

EBO takes the intent-based approach one step further, allowing planners and commanders to examine the causal linkages and effects through which actions lead to objectives. It is the relevance of the causal linkages with respect to the current situation that determines whether or not the action taken will achieve the desired effect. From a planner's perspective, causal linkages help to understand why a proposed action could be expected to produce a desired effect given the current circumstances. This approach provides the basis for planners and commanders to consider all of the consequences of potential actions including, but not limited to, secondary or follow-on effects and unexpected effects. An effects-based approach also leads to addressing those effects that are counterproductive to attaining the objective, in an effort to minimize or eliminate their impact.

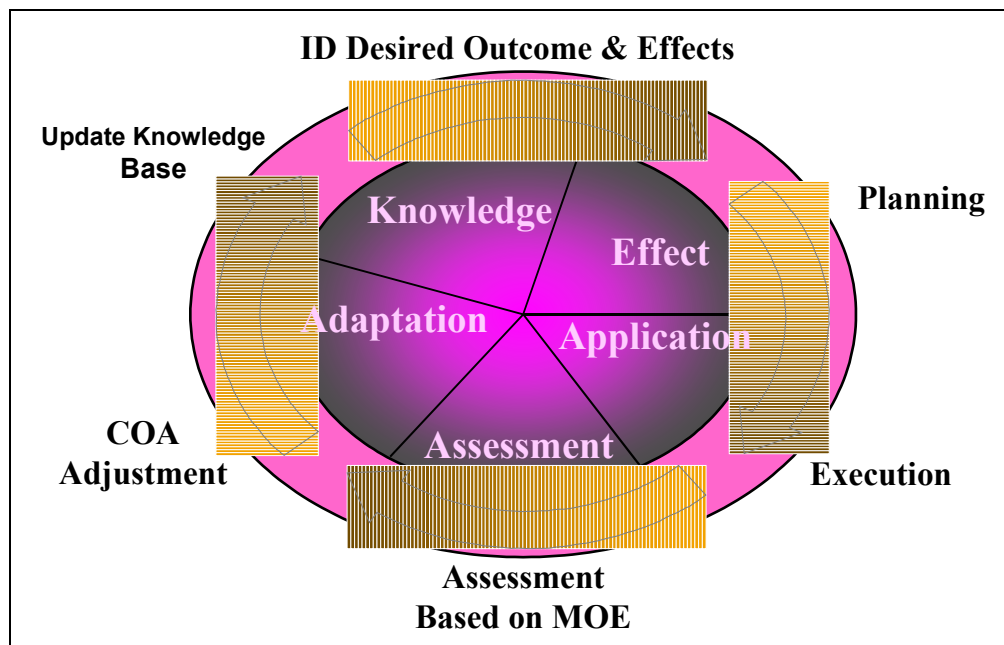


Figure 2: The EBO Cycle.

EBO envisions more comprehensive insight into the adversary, the environment, and our own capabilities to facilitate the determination of desired effects, the application of the full spectrum of non-military as well as military capabilities, an assessment of the resultant outcomes, and rapid adaptation to changing situations.

Figure 2 depicts a representation of EBO from a military Joint Command view. As shown, the EBO process can be depicted as a planning and execution cycle, which is continuous and iterative. The cycle begins with the development of comprehensive insight—that is, knowledge into the nature of the adversary, the environment, and our own

¹ *Effects Based Operations*, White Paper Version 1.0 (U.S. Joint Forces Command J9 Concepts Department) p.iii.

capabilities. EBO envisions the development of this insight to a broader and deeper level than is currently achieved. A better understanding of the adversary is obtained through the fusion of information from a broad spectrum of sources, national and international, governmental and non-governmental. This fused information is applied to develop a cohesive picture of the adversary's environment with emphasis on political, military, economic, social, infrastructure and informational influences (PMESII). The adversary is then studied as a complex system of interrelated systems. Key links and nodes in those systems, as well as the adversary's cohesive strengths, weaknesses, and vulnerabilities, are identified. In order to change an adversary's behavior, one must accurately determine what the adversary values, and then put that at risk or take it away.

In military EBO applications, the focus is on achieving desired outcomes identified by the National Command Authority through their close coordination and thoughtful integration with other elements of national power. Military leaders must then relate military operations to national level goals and objectives through commander's guidance and intent. In consonance with other national actions, the joint force commander's intent will then stress the desired **effects** necessary to break the cohesion of the adversary's key systems and compel the adversary to change his behavior. This guidance should be focused on the description of an overall objective or set of objectives, defined in terms of desired effects that will lead to realization of those objectives. This guidance must also articulate the need to conduct operations in consonance with actions conducted across the spectrum of national powers.

Application is then a function of determining and applying those elements of national power—Diplomatic, Information, Military, and Economic (DIME)—that will be most effective in achieving the desired effects. It is important to *consider the full range of available national capabilities* and apply those that create the desired effects in coordinated and synergistic operations aimed at putting what the adversary values most at risk of being threatened, rendered unusable or destroyed altogether.

Key, then, is the **assessment** of the application of capabilities in terms of the effects desired. The purpose of this assessment is to provide feedback to guide the adaptation of operations as necessary. The EBO assessment process must be a continuous feedback process that can collect, process, exploit, and disseminate information to the appropriate level (strategic, operational, or tactical) in time spans that allow commanders to make decisions in what will be an intensely dynamic situation. The major emphasis of the effects-based assessment process must be the observation, measurement and evaluation of effects in the battlespace and how those actions taken to produce effects have or have not contributed to moving the state of the conflict closer to the commander's desired outcome. This requires not just the counting of targets struck or territory gained, but also an assessment based on measures that are effects-related. Effects-related assessment must determine if some or all of the desired effects were produced, what unintended effects were produced, their overall impact on the joint effort, and how the tactical actions taken either contributed or failed to contribute to obtaining the desired outcome. From a quantitative perspective, the assessment process will also reveal which actions are paying the highest return on investment.

The success of EBO relies on the ability to **adapt**; that is, the ability to assess that the existing conditions are different from their pre-conflict status, and make appropriate adaptations in plans and actions. While the process of EBO is enabled to a great extent by efforts to understand the adversary's intentions and actions, the payoff of these efforts cannot

be fully realized unless they are used to help shape friendly courses of action. Commanders and staffs need to accept uncertainty and risk in conflict, and apply the understanding of the adversary and the realities of the conflict to mitigate uncertainty and risk through assessment and adaptation. Effects-based operations, characterized by early recognition of unexpected effects and the flexibility and agility to adapt to the realities posed by those effects, increases prospects for dramatic success while at the same time reducing the risk of catastrophic surprise or miscalculation. The demonstration of EBO can send a clear message to potential adversaries; U.S. Forces are adaptive, and therefore unpredictable, due to their ability and willingness to change plans and actions to meet changing battlefield conditions.²

These concepts also have relevance to peace operations. Constructing an effects-based approach to a peace operation offers a potentially powerful paradigm for analysis and identification of indicators of success.

THE MORS EBO WORKSHOP

In January 2002, the Military Operations Research Society (MORS) conducted a workshop on effects-based operations. One working group, Chaired by this author was charged with developing “Indicators of Success.” Starting with an earlier MORS metrics paradigm as depicted in Figure 3, the working group concluded that the most relevant indicators were likely to be “Measures of Policy Effectiveness.”

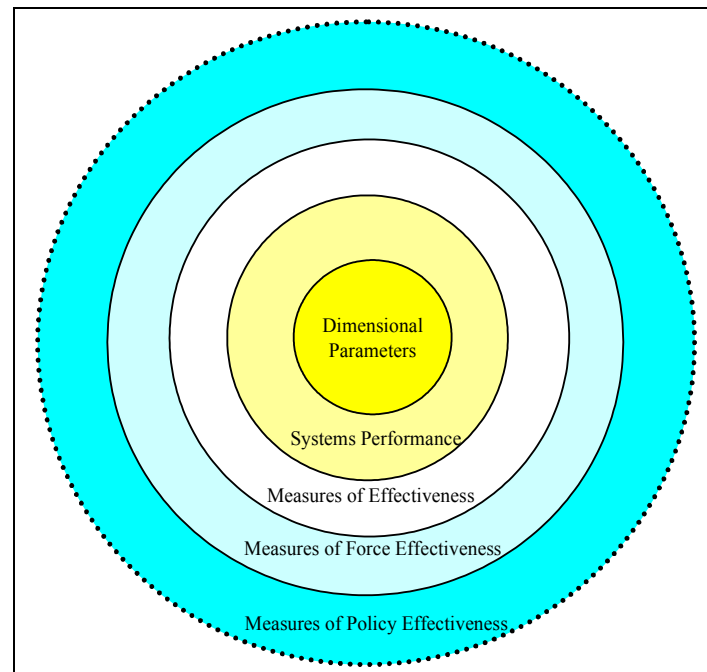


Figure 3: Measures of Merit Relationships.

The working group then developed a matrix of possible impacts of the DIME actions across the PMESII factors as shown in Figure 4. This turned out to be too simplistic. The team was looking for a “thermometer” that could give unambiguous indicators; instead we discovered a kaleidoscope. Once we regrouped our team performed a “what’s different”

² *Ibid.*, pp. iv-v.

analysis. Our first conclusion was that we were dealing with complex, adaptive, systems of systems. Analysis proceeded along two paths; first, we examined a complex but non-adaptive system and described how we might determine indicators of success.

Starting with a complex but not yet adaptive system as depicted in Figure 5, we assume that effects are created by taking actions and that desired effects will occur on a path/trajectory to the desired end state. These may be thought of as stepping-stones from one state to another.

	Political	Military	Economic	Social	Infrastructure	Information
Diplomatic						
Information						
Military						
Economic						

Figure 4: The DIME/PMESII Matrix.

However, in complex systems one action may create more than one effect. The transitory states are multi-dimensional and other active agents are influencing the state changes. More than one system is included at each state change. For example, an action taken for political effect may also produce effects in another realm such as the social.

In this complex, but not yet adaptive system, the indicators of success need to show several things along our desired path from one state to another. First, of course the indicators must show progress along the path. Are the actions producing the desired effects? Second, we need indicators that show where else we may be going and perhaps do not wish to go (e.g., indicators of undesired effects). We need to ask at each point; are our actions producing other effects? And third, are we seeing effects in other dimensions (e.g., political/social)? Did our actions produce effects in more than one system and are there second and third order effects?

We concluded that indicators of success need to display progress along causal path of transition to next desired state, display movement toward other states (undesired, etc), and display the realities of many dimensions (e.g., P state AND S state). Overall, the indicators must show validity of the path/trajectory.

The Indicators will likely have more dimensions than the actions taken. For example, an action may be taken against P system, while indicators may show change in both P and S systems because P and S systems interact (change in S system may be direct, indirect, or unrelated to the actions).

- Assuming:
 - Effects are created by taking actions.
 - Desired effects change states on a path/trajectory to the desired end state (e.g, stepping stones).
 - One action may create more than one effect (states are multi-dimensional).
 - Other active agents are influencing state changes
 - > More than one system is included at each state (e.g., political and social).
 - System is complex (not adaptive yet).
- Then Indicators of Success for EBO:
 - Must show validity of the effect/state.
 - > Display progress along causal path of the transition to next desired state.
 - Are our actions producing our desired effects?
 - > Display progress toward other states (undesired etc.)
 - Are our actions producing other effects?
 - > Display realities of many dimensions (e.g., P state AND S state).
 - Did our actions influence more than one system?

Figure 5: What's Different About Complex Adaptive Systems.

- Indicators (continued):
 - Must show validity of the path/trajectory.
 - > Are the stepping stones actually leading us to the desired end state?
 - Indicators will have more dimensions than the actions taken.
 - > Action may be taken against P system, while indicator will need to show change in both P and S system because P and S systems interact (change in S system may be direct, indirect, or unrelated to your actions).
- Then in a complex, adaptive system:
 - Indicators will have temporal validity (might only be relevant for a short period of time) as the state transition network may/will change

over time.
> Trajectories to reach the desired end state may change.

Figure 6: What's Different About Complex Adaptive Systems (Continued).

From this initial analysis we surmised that in EBO there appears to be no simple cause-effect relationships. Actions taken in one domain can produce changes in other domains and also cause changes that are unrelated or unintended in all domains. To further confound the analysis we added the temporal dimension and examined a complex, adaptive system. Here the indicators will have temporal validity (might only be relevant for a short period of time) and the state transition network may/will change over time. The trajectories to reach the desired end state may change and indeed, the desired end state may also change as we observe the adaptation of the adversary or the situation to our actions.

The working group concluded that EBO metrics are vastly more complicated than measuring operational effectiveness in one dimension. There are multiple cause and effect relationships stemming from any single action, and second order, third order, and unintended consequences are common. EBO indicators are inherently scenario specific and for analysis must be examined in the context of an operation with specific goals and objectives. Indicators leading to transitional end states are more useful in an operational context and should show progress towards that intermediate end state. Since effects occur across the PMESII regime, and since decision-makers may, due to political or other pressures, change their goals, it is essential for EBO analysts to be able to measure effects by constant monitoring, evaluating, and sorting through situational data to see what is happening and how it is different than what has previously happened or expected. We also learned that equally important to effects-based analysis are “indicators of failure” or impending failure, as signals to stop or change an action that is having unintended consequences.

For example, actions undertaken with the noblest of motives may produce unintended consequences that were never desired or expected in the first place. International aid to populations in conflict is a good example. “Experience shows that even when it is effective in doing what it is intended to do to save lives or promote development, aid too often also feeds into, reinforces, and prolongs conflicts. Again and again aid workers tell how their aid is distorted by local politics and is misappropriated by warriors to support the war. Again and again war victims report that aid is enriching warlords or strengthening the “enemy.” Again and again the systems of aid and the manner in which aid workers interact with conflict reinforce the modes and moods of those at war, undermining and weakening the nonwar aspects of the society.

Why does aid, which is intended to do good, end up doing harm? Is it inevitable that it do so? The answers to these questions can be found in past aid experience. From the examples of aid's negative impacts gathered in many conflict zones around the world, clear and consistent patterns emerge. Although at first each example appears particular and unique—caused and shaped by special, local circumstances—a look at all the experiences together reveals important similarities”.³

³ Mary B. Anderson, *Do No Harm: How Aid Can Support Peace—Or War* (Boulder, Colorado: Lynne Rienner Publishers, Inc., 1999), p. 37.

AN EXAMPLE SCENARIO

Because we concluded that effects-based indicators of success can only be derived in the context of a specific scenario, we developed several scenario vignettes. Our scenario in this example involves a humanitarian assistance mission that occurs in a destabilized region of the world. Earlier tribal warfare has caused a severe shortage of food supplies and displaced a large segment of the population. While the fighting has for the most part stopped, there is still scattered violence and extensive banditry. The recognized government of “Alpha” has some control in its two major cities but little or no control in the countryside. Alpha has requested and received a United Nations peacekeeping force and significant humanitarian aid in the form of foodstuffs.

The United Nations lead has stated the following transitional end-state goals:

- Prevent starvation.
- Create a safe and secure environment.
- Return displaced persons to their homes.
- Transition to a stable government.

What then would tell us that we were on the road to success? In each area listed (and indeed oversimplified in this example) what would analysts and political leaders expect/hope to see as indicators that our stepping stones are taking us where we want to go? One approach is to develop influence diagrams and map not only the connections of actions to effects at the operational level, but also how operational effects influence the political and strategic levels. In this scenario what might be some representative indicators of success and failure? One might logically expect that an indicator of success in preventing starvation is the amount of food aid provided. How many people have been fed? Is a large number good because it means that many people are being fed, or does it mean that dependence on outside aid militates against renewed domestic food production? Anderson states that experience shows that aid affects conflict in five predictable ways.

1. Aid resources are often stolen by warriors and used to support armies and buy weapons.
2. Aid affects markets by reinforcing either the war economy or the peace economy.
3. The distributional impacts of aid affect intergroup relationships, either feeding tensions or reinforcing connections.
4. Aid substitutes for local resources required to meet civilian needs, freeing them to support conflict.

5. Aid legitimizes people and their actions or agendas, supporting the pursuit of either war or peace.⁴

Likewise a safe and secure environment can exist in either a democracy or a police state. In Haiti, for example, steps taken to create and train a national police force instead resulted in an enforcement arm of the Lavalas political party.⁵ Figures 7 through 11 provide indicators that might show success in peace building and compliance scenarios. We again stress that these **indicators cannot be viewed in isolation**. They form threads in a complex mosaic that must be viewed from many points, over time, and tempered with experience.

- Example of desired political effect: Change the behavior of a political leader.
- Leader's actions indicate compliance with our desired behavior.
- Statement(s) of leader and other political leadership.
- Actions of population (e.g., Demonstrations/Riots).
- Actions/Statements of neighboring nations.

Figure 7: Indicators of Success: Political.

- Example of desired effect: Reduce adversary's ability to purchase arms.
- Economic Indicators (e.g., Inflation, Foreign Debt).
- Prices (e.g., Food, Fuel).
- Taxes.
- Foreign Investment: Amount, by Whom.
- Availability of Goods and Services.

Figure 8: Indicators of Success: Economic.

⁴ *Ibid.*, p. 39.

⁵ Scott Wilson, *The Washington Post*, "Once an ally, Haitian politician now worries U.S.," *International Herald Tribune*, March 7, 2002.

- Mobility of the Population.
- Phone/Communications use
- Social Stability.
- Relative freedom of the Media.
- Public Health.

Figure 9: Indicators of Success: Social.

- Amount of Infrastructure Services Available:
Roads, Railroads, Communications, Media.
- Status of Repairs.
- Volume of Usage.

Figure 10: Indicators of Success: Information.

- Degree of Government Control.
- Volume.
- Path (e.g. direct to population).
- Degree of Hostile activity.

Figure 11: Indicators of Success: Infrastructure.

- Less direct cause-and-effect relationships in EBO than in attrition-based relationships.
- Indicators of success tend to be scenario-specific.
- There is never a final end state but indicators should show progress towards some intermediate end state.
- Indicators must be continuously monitored and adjusted as system adapts.

Figure 12: Indicators of success: Conclusions.

CONCLUSIONS

There is little or no direct cause and effect relationship in complex adaptive systems of systems that are the norm in compliance and peace building. Actions taken with the best of intentions may have very contrary results and one must be alert for indicators of failure as well as indicators of success. The situation must be monitored constantly with the understanding that goals and desired effects may change over time as the system adapts to the various stimuli applied. Indicators of success/failure tend to be scenario specific and what works in one situation may have little relevance in other scenarios. Indeed, what works in one instance may produce negative results in other cultures and scenarios.

There is in reality never a true end state, but rather only transitional end states. Success must be analyzed across a temporal continuum—the stepping-stones from one state to another. When the goals are sufficiently realized, one can claim having reached a transition point. Haiti is a good example. By the indicators used in *Operation Restore Democracy* the United Nations-sanctioned, United States-led, Haitian intervention was a success. The mission was clearly defined and had an exit strategy identified and adhered to. Transfer to United Nations authority occurred according to schedule. The military dictator was deposed and democratic elections were held.⁶ But are Haitians any better off today? Have the systemic problems been resolved or have we merely put a Band-Aid on a cancer?

The following quote from the *Economist* puts it all in perspective and sends us a powerful signal about how we might view indicators of “success.”

“SEVEN years after American troops intervened to oust a brutal military regime and reinstate Haiti’s democratically elected president, little has changed in Latin America’s poorest country. Although civilians still rule, President Jean-Bertrand Aristide — elected again last year after a five-year gap — is hardly living up to expectations as the great democratic hope.

Serious signs of political instability have also returned. After almost a decade without a coup, there were two attempts last year, in July and December. Opposition politicians and journalists have been hounded, and their offices and homes burned, by the *chimère*, Mr Aristide’s hired thugs from the slums.

Meanwhile, the economy has stagnated. Two-thirds of Haiti’s 7.8m inhabitants live in poverty, half of all adults are illiterate, and less than a quarter of rural children attend primary school. Infant and maternal mortality rates remain among the highest in the world, and Haiti produces more new cases of HIV-AIDS each year than the entire United States.”⁷

⁶ Margaret Daly Hayes and Gary F. Wheatley, Editors, *Interagency and Political-Military Dimensions of Peace Operations: Haiti—A Case Study*, (Washington: National Defense University Press, 1996), p. 49.

⁷ “Where racketeers rule. A rickety island becomes yet more unstable,” *Economist*, January 31, 2002.