

Net Assessment: A Practical Guide

PAUL BRACKEN

© 2006 Paul Bracken

Net assessment is one of the principal frameworks for analyzing the national security strategy of the United States. It has been used by the Department of Defense for many years. Understanding net assessment—what it is and what it can do—is important for two reasons. First, it has general application to many military issues. Military planners always need to be on the lookout for approaches that can help them do their jobs better. Net assessment should be in that tool kit.

A second reason for getting a better understanding of net assessment is that it has become an important part of the language spoken by leaders in the higher levels of DOD. Any officer who doesn't understand this *lingua franca* will be at a disadvantage in communicating with the civilian leadership. Senior officers need to comprehend the language used—if one receives a staff assignment to Russia, he would be a lot better off if he spoke Russian; likewise, if one anticipates a senior military or civilian assignment in the Pentagon, he or she needs to understand net assessment.

But net assessment remains something of a mystery to many people. This article aims to demystify net assessment by examining its key features. With this basic starter kit, one should be able to listen to briefings that use net assessment; comment intelligently on those briefings; and become a contributing member on a team that takes net assessment as its framework.

A useful exercise is to take the points made in this article and apply them to one of the major problems in your current assignment. Net assessment isn't applicable to all problems, of course. No set of tools or frameworks ever is. But any problem involving competition (e.g. Red vs. Blue for the mil-

itary, or Army vs. a contractor) merits taking a look at net assessment to see what insights it can bring.

What is Net Assessment?

There are several published histories of net assessment.¹ Most focus on defining it in the negative—that is, how it differs from other analytic approaches. Thus, net assessment is not systems analysis. Nor is it operations research, or strategic planning.

Describing what net assessment isn't, is a useful thing to do. But it isn't helpful for someone who is trying to learn how to apply it to his or her problems.

Net assessment, alternatively, is sometimes defined in terms of the individuals who have pioneered its advance. In particular, it is closely identified with its principal developer, Andrew Marshall, the founding and current Director of the Office of Net Assessment in the Department of Defense. While this is important to know, this definition suffers from the same defect as defining it in the negative. Anyone who wants to use net assessment needs a more operational understanding.

The best way to define net assessment is to understand that it is a practice. It isn't an art (like military judgment), nor is it a science (like chemistry). Rather, it's a way of tackling problems from certain distinctive perspectives that involve skills that can be improved. Any "practice" is made up of several skills. A business manager, for example, needs to know how to control costs, satisfy customers, and plan for where his company will be in the future. He uses accounting, marketing, and forecasting. Each of these elements offers a particular perspective on the business, and each also involves certain skills. For example, a manager can improve his marketing skills by taking courses in the subject, reading up on it on his own, or by joining a professional marketing association.

By knowing the perspectives of net assessment, and sharpening the skills associated with each of them, one will be able to apply net assessment and also be able to speak an important language. This way of defining net assessment is positive and productive. It comes from many years of working with its practitioners, and from applying it in numerous studies.²

Paul Bracken is Professor of Management and Political Science at Yale University. For ten years before joining the Yale faculty he was on the senior staff of the Hudson Institute, directing its management consulting arm. He has a B.S. in engineering from Columbia University and a Ph.D. in operations research from Yale University, and he has lectured at all of the US service war colleges.

Strategic Interactions

The origin of net assessment, the establishment of the Office of Net Assessment, and even the term itself came from the need to tie US defense policies with the anticipated reactions of opponents. This is absolutely fundamental to net assessment.

There are, of course, many ways for capturing strategic interactions. Game theory and other formal approaches make explicit the competitive interactions of the different sides. But game theory has never proven to be all that useful in net assessment. Net assessment's characterization of strategic interactions is different from more formal approaches, and it is important to understand this difference.

Net assessment emphasizes that strategic interactions are shaped by the complex sprawling organizations that break big problems into manageable smaller ones. All big organizations, corporate and military, break large problems into smaller, more manageable pieces. This decomposition, and recomposition back into a coordinated policy, is universal once the scale of a problem reaches beyond a certain point. It is the reason that big organizations are internally divided into departments.

It was net assessment that first saw the distortions that arose from how this problem factoring was done. It was no coincidence that net assessment arose, intellectually speaking, out of studies in the 1950s and 1960s. This was the first time in US history when a standing military was maintained at a significant strength after the end of a war. It led to the creation of a large defense bureaucracy whose individual parts had to be coordinated into an overall strategy.

In the United States, as in most countries, one of the basic ways national security problems are broken down is departmentally between the military and the civilian intelligence community. Each jealously guards its role, and each is concerned about not revealing information which might help an opponent. This departmentalization had significant effects on strategy. Problems could be broken down in different ways. For example, did the military and the civilian intelligence agencies conceive of the opponent in the same way? Did they see trends similarly?

Departmentalization also created a need for integration. At some point, information about intelligence and military plans had to be put together. But while many people assumed this happened automatically, those with a grasp of net assessment understood that nothing is automatic in big organizations.

A vivid example of such integrating dynamics arose early in the Cold War. Analysts at the RAND Corporation in the 1950s misestimated the

“If one anticipates a senior military or civilian assignment in the Pentagon, he or she needs to understand net assessment.”

Soviet nuclear threat because they were never privy to some key information about Soviet bombers. At that time Soviet Bison and Bear bombers had critical engine reliability problems. Simply stated, not many could reach the United States without having their engines conk out over the Arctic. But this vital information was known to only a very small number of people in the intelligence community. They couldn't talk about it for security reasons.

As a result, RAND studies of Soviet nuclear striking power were badly skewed. Readers of the reports in the Pentagon had no reason to suspect that they weren't getting the full picture—that is, that an accurate integration of intelligence and US war plans wasn't being conducted. They didn't know what they didn't know. This had significant consequences. Perceptions about US risk-taking were based on a key false premise, that the Soviets were more powerful than they actually were. “Red” (Soviet) and “Blue” (US) interactions were badly misperceived.

Any belief that all of the critical information would be assembled at the White House, in the National Security Council (NSC), fails to appreciate how real government organizations actually work. As the Nobel Prize-winning economist Herbert Simon once said, “Short term thinking drives out long term strategy, every time.” The White House and NSC focus on administrative coordination of the day-to-day bureaucracy that constitutes the US national security community. Neither is institutionally prepared to integrate long-term strategic actions with high-level military intelligence.

Net assessment, thus, had its origins in the need to integrate Red and Blue strategy in a single place. This is where the term *net* came from. It is like the net profit of a business. Costs are subtracted from gross revenues to get net earnings. In the same way, net assessment takes into consideration both Red and Blue actions. It produces an overall “net” assessment of a competitive situation. The actions in question might be official plans, or they might not be. For example, they could be bureaucratic operating patterns rather than officially approved strategies.

The lesson here is not to assume that the competitive dynamics one faces are automatically integrated well. We have to expend extra effort to

make sure that the “Red” and “Blue” information is not only accurate, but that the right implications are being drawn about them. There are all kinds of reasons why this might not be taking place. You need to study the opponent, whether it is a terrorist cell or a company doing business with your department. Improve your understanding of how they see the world, what metrics drive their behavior, and so forth.

Longer Time Spans

Many national security problems are driven by one of two time rhythms. The first is the current news cycle. The insurgency in Iraq, or negotiations over nuclear weapons with North Korea, are examples. Another rhythm comes from changes in political administration. In the United States this occurs every four or eight years, when new personnel come into office.

Looking at strategy through the lenses of either of these two time spans misses a great deal, however. One of the greatest contributions of net assessment is that it calls for consciously thinking about the time span of the competition you are in. Change that is imperceptible on any given day can produce large effects viewed over time. For example, one way to look at China is to focus on the decision of whether or not Beijing’s leaders will attack Taiwan. This, of course, is an important question, but it leaves a great deal out. Changes in China’s military capacity from one year to the next are small. Yet looked at over a time span of 20 years, one sees a very different picture. Twenty years ago China had almost no missiles facing Taiwan. Today the number is over 800. Indeed, many of these can reach far beyond Taiwan and have broader implications for stability in East Asia.

Net assessment was really the first framework which correctly identified the importance of Asia as an area of strategic competition. It did this in the 1980s, when there was essentially no immediate problem of Asian security beyond that on the Korean peninsula. But several net assessment studies indicated the potential for competition as countries there acquired weapons with longer reach.

Net assessment practitioners are very interested in perceptions of power, and have undertaken pioneering work in this area.³ They don’t automatically assume that these perceptions are reality. Instead, they study the relationship of forces and perceptions of those forces. This is fundamental for understanding power shifts. Perceptions of power almost always lag geopolitical change. In his October 1941 book, *Inside Asia*, John Gunther confidently declared that “as everyone knows, Britain is the strongest military power in Asia.” Gunther based this conclusion on his interviews with leaders in Japan, Britain, the United States, China, Indonesia, and the Philippines—all conducted in the summer of 1941, before Pearl Harbor. There was no rea-

son to believe Gunther was wrong; his declaration had been true for nearly a hundred years. But this seemingly accurate perception was shattered in a few days in late 1941 and early 1942. Britain was not the strongest military power in Asia, but a distant third behind the United States and Japan. The perceptions of journalists and even elite opinion-shapers and policymakers badly lagged geopolitical reality.

Getting Things Right with a Little Thought

In long-range forecasting and futurology it's clear that many predictions have turned out to be terribly wrong. Sometimes these mistakes are collected in an article or e-mail, giving the impression that forecasting is, for all practical purposes, impossible. Many of us have seen these: "Man will never walk on the moon" (1950); and, "The demand for electronic computers in the United States is probably about three of them" (1955). One walks away from such arguments with the sense that the future is too uncertain to ever predict.

But the opposite point needs to be made as well. You can get many things right just by thinking about them a little bit. All too often no one is looking at the really important problems. In a Pentagon briefing in the 1970s, Herman Kahn audaciously proclaimed that he and his colleagues at the Hudson Institute happened to be the world experts on *ending* a nuclear war. The Pentagon had studied many ways that a nuclear war could start, Kahn argued, but not how it would end.

The audience was incredulous. One official challenged Kahn as to how anyone could possibly be an expert on ending a nuclear war. Kahn shot back: "I put two junior people on it for a couple days last week. We've thought more about it than the entire Department of Defense has."⁴

A similar phenomenon is repeated time and again in large organizations. To get an estimate wrong, there has to be an estimate in the first place. What one often finds, unfortunately, isn't estimates that are wrong, but the realization that no one has thought about any estimates at all. There is a big difference between the two—one is a failure of methodology, the other of imagination.

Net assessment tends to study issues that are important but overlooked. There are many such problems in national security. The methodological tools for analyzing such understudied problems are often less important than simply identifying them in the first place. This is in contrast to the usual tendency to exhaustively analyze over and over what is already known.

Net assessment warns against "muddling through" important but neglected problems. This can be very dangerous. Muddling through makes short-term decisions, and triangulates among the immediate political and budget pressures of the moment. It makes little attempt at understanding in-

“One of the greatest contributions of net assessment is that it calls for consciously thinking about the time span of the competition you are in.”

terrelationships between means and ends. This can produce a “tyranny of small decisions,” where responding to short-term pressures lays the groundwork for much bigger problems later on. Small decisions accumulate, and they can lead an organization to an untenable overall situation down the road. The British in the 1930s refusing to acknowledge the danger of Hitler, US strategy in Vietnam, and many other examples all had this characteristic: On any given day the “small” decisions seemed reasonable. They kept the various parties happy, or at least placated, and they didn’t break the bank. But over a period of years, they led to disaster.

Net assessment tries to recognize the bureaucratic desire for administrative convenience and to see where it might lead. The skill here is to develop the habit of asking, “Where will current trends in my organization lead if nothing is done?” This kind of thinking is very different from focusing on immediate challenges like short-term cost reduction.

The Importance of Socio-Bureaucratic Behavior

Net assessment had an early parting of the ways with operations research and systems analysis (ORSA). One reason was that ORSA studies rarely included bureaucratic behavior, which distorted the optimizing techniques emphasized in their approaches.

The Soviet Union, for example, never optimized its strategy against the United States in the sense of allocating resources to an efficient production schedule of weapons matched to American weakness. A good deal of Soviet weaponry was better analyzed by understanding the design bureaus that produced it. Bureaus with political clout, or those with prestigious design teams, consistently received a disproportionate share of Soviet defense capital. Imputing a carefully optimized strategic intent behind these programs led only to ill-conceived assessments of Soviet strategy.

The same point is relevant today. Neglect of bureaucratic dynamics remains one of the leading reasons that even commonsense discussions of strategy are often far off the mark.⁵ At the present time the defense institutions

in China, India, Iran, Israel, and other countries are going through major organizational and personnel transformations as these states incorporate advanced technologies into their military forces.⁶ Their capacity to link different technologies is leading to new bureaucracies. The influence of infantry generals is diminishing, and that of civilian defense scientists is rising. A “nuclear mafia” of scientists and civilian defense officials is emerging in these states that will affect not just particular technical issues, but also the mind game of nuclear strategy that will play out in the future. Unfortunately, this development is missed by many current studies of nuclear nonproliferation when those conducting the assessments impute unified rational actor calculations to what are more accurately considered arenas of internal bureaucratic opportunism. The skill needed in this regard is to recognize the importance of bureaucratic dynamics.

Strategic Asymmetries

In the 1970s, General Motors thought its competition was Ford and Chrysler. Those were the firms they focused on. And those were the firms they understood. The Big Three used the same technology, recruited from the same labor markets, and bought the same kind of steel. What GM missed, along with Ford and Chrysler, was Toyota and Nissan. That was their real competition. They not only missed the importance of the Japanese manufacturers’ entry into the US market, they also missed *how* they competed. Toyota and Nissan had different histories from the Big Three. They approached problems of inventory control and production in a fundamentally different way. The result has been a 30-year loss of market share from GM and Ford to the Japanese.

If auto companies from the United States and Japan compete in a fundamentally different way, in what other arenas will countries compete differently? Yet it is all too common to assume that other competitors are more or less like the United States.

Strategic asymmetries describe how one competitor differs from another. They may use technology in different ways. Their strategic cultures are different. And there may be many other differences. Net assessment has long emphasized getting these differences out on the table. Simply recognizing the existence of strategic asymmetries is often an important first step.

Yet it is a step that is often very hard to take. For example, in the United States since the end of the Cold War there has been a wholesale flight from anything to do with nuclear weapons. Nuclear weapons are considered a relic of the Cold War. Even as China, India, and others have reenergized their nuclear weapon programs, the United States refuses to acknowledge this development. US nuclear “forgetting” contrasts with the nuclear learning going on in China, North Korea, Iran, India, Pakistan, Israel, and others. This is a significant strategic asymmetry.

Strategic asymmetries exist in many areas of competition, not just in the nuclear area. Identifying these is an important step in understanding one's opportunities and vulnerabilities, and those of one's opponent.

The Multifaceted Nature of Strategy

Net assessment is not strategic planning, but net assessment does consider strategies. While rarely recommending any particular strategy (that's the job of the policymaker), net assessment defines features of what any good strategy should have.

One of net assessment's distinctive contributions to strategic analysis is its insight that strategies are multifaceted. A strategy has many parts, and the parts should work together. It should incorporate organizational, personnel, and technological factors. Without these, strategic analysis can easily become so abstract that it becomes little more than a set of isolated hopes, rather than a specification of the means that produce the desired ends.

For example, the argument that the United States should have a "strong military second to none" is sometimes advanced as a strategy. Stated in these terms, this expression of strategy isn't very helpful, because it is so broad as to be hard to disagree with. It leaves out such important questions as who gets what, military tactics, and whether particular allies yield a net positive or negative effect on American power.

The valuable insight from net assessment is that strategy is more than rivalry. Too often, national security studies assume that if head-to-head rivalry can be dampened, the problem of national strategy is therefore solved. There are several factors involved in competition, however, and rivalry is only one of them. Focusing only on rivalry masks all sorts of important factors that should determine strategy.

The particular set of forces beyond direct rivalry between competitors will vary from one situation to the next. It might be access to energy or influence over a key region. But the insight that such factors are important is a major contribution of net assessment.

Methods of Net Assessment

These six perspectives and associated skills are important, but it is their combined application that distinguishes net assessment from other analytical frameworks. Net assessment is like a strategic framework comprising these six perspectives. In any particular project, however, there is a need for tactical methods, tools of the trade which pull the six together.

Scenarios, war games, trend analysis, and considered judgment are the methods most widely used in net assessment studies and analyses.⁷ A common feature of these methods is that they do not require a high degree of

“Net assessment tries to recognize the bureaucratic desire for administrative convenience and to see where it might lead.”

problem structure in order to be useful. In contrast, to use the optimization methods of systems analysis requires considerable problem structure. Most of the problems studied in net assessment do not have this, at least when they are first approached. Absent a high degree of structure, it makes good sense to use methods that don't require it.

At one time just this style of practice—using scenarios, numbers, and simple models—characterized operations research. The first operations research study ever conducted was a simple analysis in 1940 of fighter losses in the Battle of France. It led to the momentous decision by policymakers in London not to reinforce Britain's army on the continent, but to evacuate it back to its home soil. According to the project leader, the analysis was “an impromptu two-hour study” conducted in London.⁸

In later years this style of analysis has increasingly died out in ORSA, in favor of more formal and complex approaches. Today most people even define ORSA as a collection of specific techniques (linear programming, game theory, dynamic programming, etc.). This trend reinforced the need for frameworks like net assessment, which recognizes important issues left out of ORSA work.

Net assessment rarely uses complex mathematical computer models to understand a problem. From a net assessment perspective, many of these models are misleading. They rarely discuss the intense uncertainties that exist in relationships among the variables, and they make assumptions more to ease the modeling task than to represent actual relationships in the world.

A principal distinction is sometimes made between quantitative and qualitative analysis. This is almost guaranteed to get one off to a bad start. It is usually a sign that some big complex model is about to come, one whose contents and variables are likely to be incomprehensible to most observers.

Perhaps oversimplifying, there seem to be two kinds of people in the world: those who build mathematical models, and those who focus on the world. The two groups usually don't talk to each other. Each plays to a different audience. The modeler gains status by impressing other modelers and giving talks at professional societies. Those who focus on the world usually

don't go to such meetings. They play to an audience of what's actually taking place on the battlefield, whether it is located in a foreign land or in a corporate board room.

In place of modeling complex and thinking simple, net assessment tries to *model simple and think complex*. The spirit is one of using relatively simple models, numbers, and trends, and to think long and hard about what they mean.

Conclusions

Net assessment is neither an art, like filmmaking, nor a science, like chemistry. It is a practice, and like all practices it has distinctive skills which can be learned.

Having said this, there are artistic and scientific aspects to net assessment. Sophistication and experience are important for good work in the field.

An interesting metaphor for net assessment is to compare it to Wall Street. Everyone on Wall Street has more or less the same information available to them about stock prices and company performance. The United States has the most transparent securities laws in the world. Balance sheets and operating statements of companies are public information and are readily obtainable. But some Wall Street players do better than others. Having data is important. But it isn't enough. Time after time some players use information that is available to all to make a lot more money than other players.

Net assessment is like this. It uses data that are widely available and creates strategic insights that lead to decisive advantage. It offers paths through the increasingly dangerous landscape of national security, and it is likely to remain an important framework for a long time to come.

NOTES

1. For example, Eliot A. Cohen, *Net Assessment: An American Approach*, Jaffee Center for Strategic Studies (JCSS) Memorandum No. 29 (Tel Aviv, Israel: JCSS, April 1990); and Office of Net Assessment and Institute for Defense Analyses report, "Net Assessment: The Concept, Its Development, and Its Future," 22 May 1990.

2. The views offered here have benefited from many individuals, but they are my own and should not be interpreted as official statements of any part of the US government.

3. A pioneering effort to interrelate military balances with mass public opinion and elite perceptions of these balances was initiated by the Office of Net Assessment in the 1970s. This study could today usefully serve as a framework for problems in better understanding the global war on terror. See Herbert Goldhamer, *Reality and Belief in Military Affairs*, RAND Corp. Report R-2448 (Santa Monica, Calif.: RAND, June 1977).

4. The author was in this briefing and witnessed the exchange.

5. See Martin Shubik, "Game Theory and Operations Research: Some Musings Fifty Years Later," *Operations Research*, 50 (January-February 2002), 192-96.

6. Paul Bracken, *Fire in the East, The Rise of Asian Military Power and the Second Nuclear Age* (New York: HarperCollins, 1999).

7. For a more detailed discussion, see Paul Bracken and Martin Shubik, "War Gaming in the Information Age, Theory and Purpose," *Naval War College Review*, 50 (Spring 2001), 47-60.

8. J. de Montigny, *Bulletin of the Canadian Operational Research Society* (1972), p. 5.