

# **JCSS**

# **jaffee center for strategic studies**

---

Eliot A. Cohen

## **Net Assessment: An American Approach**

JCSS Memorandum no. 29 - April 1990



TEL AVIV UNIVE

# **Net Assessment: An American Approach**

**Dr. Eliot A. Cohen**

**Lynde and Harry Bradley Senior Research Associate**

**John M. Olin Institute for Strategic Studies**

**Harvard University Center for International Affairs**

**Copyright 1990 Eliot A. Cohen**

## **Introductory Notes**

The following paper is based on a lecture presented at the Jaffee Center for Strategic Studies on August 17, 1989. At that time the author was a Visiting Fellow at the Center, as well as the Bradley Senior Research Associate at Harvard's Olin Institute for Strategic Studies.

Mr. Andrew W. Marshall is the pioneer of American net assessment, and the author's debt to him is very great. However, the views expressed herein are the views of the author only, and not necessarily those of any other individual or governmental organization, including the Office of Net Assessment/Office of the Secretary of Defense.

In what follows, "net assessment" and "net assessors" refer to ideal types, and not necessarily to current American practice.

## **Introductory Notes**

The following paper is based on a lecture presented at the Jaffee Center for Strategic Studies on August 17, 1989. At that time the author was a Visiting Fellow at the Center, as well as the Bradley Senior Research Associate at Harvard's Olin Institute for Strategic Studies.

Mr. Andrew W. Marshall is the pioneer of American net assessment, and the author's debt to him is very great. However, the views expressed herein are the views of the author only, and not necessarily those of any other individual or governmental organization, including the Office of Net Assessment/Office of the Secretary of Defense.

In what follows, "net assessment" and "net assessors" refer to ideal types, and not necessarily to current American practice.

## Contents

	Page no.
<b>Introductory Notes</b>	<b>2</b>
<b>What is Net Assessment?</b>	<b>4</b>
<b>Net Assessment versus "The Estimate of the Situation"</b>	<b>7</b>
<b>Net Assessment versus Systems Analysis</b>	
<b>Methodology</b>	<b>9</b>
<b>Attitudes to Numbers</b>	<b>10</b>
<b>Frame of Reference</b>	<b>11</b>
<b>The Central Question</b>	<b>11</b>
<b>A Net Assessment Template</b>	
<b>How should we think about the balance?</b>	<b>13</b>
<b>Trends</b>	<b>14</b>
<b>Concepts of Operation</b>	<b>15</b>
<b>Asymmetries</b>	<b>17</b>
<b>Scenarios</b>	<b>18</b>
<b>Practical Problems of Net Assessment</b>	
<b>Data</b>	<b>20</b>
<b>Supporting Studies</b>	<b>21</b>
<b>The Organizational Design and Bureaucratic Politics of Net Assessment</b>	<b>21</b>
<b>Future of Net Assessment</b>	<b>23</b>
<b>Notes</b>	<b>24</b>

## Contents

	Page no.
<b>Introductory Notes</b>	<b>2</b>
<b>What is Net Assessment?</b>	<b>4</b>
<b>Net Assessment versus "The Estimate of the Situation"</b>	<b>7</b>
<b>Net Assessment versus Systems Analysis</b>	
<b>Methodology</b>	<b>9</b>
<b>Attitudes to Numbers</b>	<b>10</b>
<b>Frame of Reference</b>	<b>11</b>
<b>The Central Question</b>	<b>11</b>
<b>A Net Assessment Template</b>	
<b>How should we think about the balance?</b>	<b>13</b>
<b>Trends</b>	<b>14</b>
<b>Concepts of Operation</b>	<b>15</b>
<b>Asymmetries</b>	<b>17</b>
<b>Scenarios</b>	<b>18</b>
<b>Practical Problems of Net Assessment</b>	
<b>Data</b>	<b>20</b>
<b>Supporting Studies</b>	<b>21</b>
<b>The Organizational Design and Bureaucratic Politics         of Net Assessment</b>	<b>21</b>
<b>Future of Net Assessment</b>	<b>23</b>
<b>Notes</b>	<b>24</b>

## What is Net Assessment?

What follows represents only one line of thinking about net assessment, which we may define as "the craft and discipline of analyzing military balances." From the first part of this definition an important characteristic of this approach becomes clear: net assessment, in this view, is not a science or anything close to it. Although net assessment may draw on various forms of quantitative analysis, it makes no pretense to the certainty (such as it is) of operations research, much less the hard sciences. Many do not share this view, and think that not only is scientific rigor, of the kind associated, let us say, with molecular biology, possible in this field, but that scientific progress characterizes it as well. My view is more pessimistic: a storehouse of wisdom about doing net assessments has been built up in the Office of Net Assessment (ONA) in the Office of the Secretary of Defense, and many statesmen and generals have, in the past, made superb net assessments. But there is no guarantee that accumulated good sense will survive in any bureaucracy, and individual genius appears and flourishes as it wills. What is worse, many of the approaches to net assessment that dominate contemporary academe, and to a lesser extent the public and contract research worlds are, in fact, profoundly destructive of sound net assessment.

Net assessment is the appraisal of military balances. It goes on all the time in the minds of decisionmakers and their staffs. Their implicit beliefs--no matter how inarticulate, sketchy, inconsistent, or fantastic--about how well they will do against a given enemy constitute a form of net assessment. But this paper will deal with explicit, policy-oriented net assessment. Historians, who have much to contribute to this field, do a different kind of net assessment: they want to understand a military balance simply because they want to understand it, or to relate it to some other intellectual problem. Strategic net assessment, that is the weighing of politico-military balances, on the other hand, has this purpose, but another as well--the raising of problems to the attention of senior decisionmakers, such as the Secretary of Defense or the National Security Council. Strategic net assessment is the most highly aggregated form of the discipline and incorporates the many other kinds, which are of almost infinite variety. Comparisons of weapons systems, leadership styles, operational capabilities in a specific campaign, general technological development, and so forth, all feed into strategic net assessments.

Analysts doing strategic net assessment seek first to describe the nature of political-military competition in various

geographical and functional areas, under both peace and wartime conditions. Secondly, they wish to discover or highlight issues that may not require urgent action, but which do demand the attention of the most senior government officials in the national security arena. For those purposes an Office of Net Assessment has functioned in the Office of the Secretary of Defense since the early 1970s; since its beginnings it has been under the directorship of Andrew Marshall. Marshall, a former senior RAND analyst who has worked since the mid-1950s for the United States government on some of the most sensitive intelligence and strategic issues facing it, is the father of American net assessment, at least of the kind described and advocated in this paper.<sup>1</sup>

By virtue of his abilities, his personality, and the length of his tenure in office, Marshall has had a profound impact on at least two generations of military officers, civil servants, scholars, and professional researchers. But in addition to the influence of a uniquely important personality, one should note as well larger environmental factors which have molded this style. For the last 40 years the United States has been locked in a long-term strategic competition with the Soviet Union. Economically, the Soviet Union has had little chance of matching the United States and, moreover, has had relatively little interaction with it. By the 1960s Soviet communism--though not related strains such as Maoism and Castroism--posed little ideological threat to the United States, although Marxism-Leninism formed the Soviet world view and pervaded all institutions of the Soviet state. For the most part, then, the superpowers struggled on the strategic, i.e. politico-military plane. They rarely confronted each other militarily, and then almost never violently, but they fought proxy wars against each other, created the world's largest and most durable alliance systems, and built vast military machines suitable for conventional or nuclear war, and at a variety of levels of intensity. American net assessors, therefore, have faced the task of analyzing forces ranged across the globe appraising the US-Soviet balance under two conditions: peacetime competition and potential war, each of which in turn could take a variety of forms. Clearly the calculations involved were complex. On the other hand, the United States had the advantage of dealing with a single opponent, whose fundamental beliefs were well-known and who placed great weight on formal statements of doctrine. The bureaucratization of the Soviet Union also made it, in some measure, a predictable opponent.

The structure of American government and society also facilitated a distinctive approach to net assessment. For all the undeniable cumbersomeness and diffusion of power within the American political system, certain favorable circumstances facilitated official net assessment of the kind discussed here. Unlike smaller countries--Israel might be an example--the United

States could afford the human and fiscal resources to invest in an activity that produced no immediate answers to pressing policy problems. Not only can the United States staff an organization like ONA, but it can easily afford the funds for specialized external research in support of its efforts, and American society has vast pools of expertise of almost every imaginable kind. The absence of a single dominant intellectual style in the United States similarly fed the spirit of eclectic inquiry necessary for net assessment as described herein.

## **Net Assessment versus "The Estimate of the Situation"**

Strategic net assessment differs from other kinds of assessments. It is distinct from the traditional "Commander's Estimate of the Situation," which is taught to American staff officers at different ranks. The Estimate of the Situation (or Commander's Estimate) is designed to provide officers with a structured means of thinking through a tactical or an operational situation; as such it merely codifies common sense orderliness. Composed of five sections, it comprises:

1. The mission (or the problem)
2. The situation and course of action, which includes analysis of geography and weather, as well as the friendly and enemy situations
3. Analysis of various possible enemy courses of action
4. Comparison of the merits and defects of one's own courses of action
5. Decision

A sophisticated and thorough version can be found in a classic of early twentieth century American military thought, Sound Military Decision (Newport, Rhode Island: U.S. Naval War College, 1942).

Estimates of the situation can be done with greater or lesser rigor, and some of the most extensive efforts--for example, the estimate of the situation done by the US Joint Board with respect to Japan in 1929--have been models of thoroughness. But the estimate of the situation, valuable though it may be for campaign planning, has three drawbacks from the point of view of net assessment. First, it tends to be formulaic. The commander's estimate, like the "principles of war," is taught to officers of varying quality, and at varying levels of command; its purpose is not to cultivate insight but to make sure that officers make decisions in an orderly fashion. For that purpose, a fixed structure is helpful. Strategic net assessments, however, must retain extreme flexibility of format, for the structure of a study must often be determined by the substance of the issues at stake. Elaborate checklists for strategic analysis may buy comprehensiveness, but they do so at the expense of both rigidity and, what is worse, a sense of premature closure on important issues. Particularly at the higher levels of politico-

military competition, where intangible considerations weigh heavily, a looser structure of analysis is required.

A second drawback of the estimate of the situation lies in its focus on an immediate military effort, in the form of a battle or a campaign. In contrast strategic net assessment looks at a competition, a struggle that may have no clearly defined beginning or terminus. Finally, the estimate of the situation focuses on the here and now. Even the 1929 Joint Board study referred to above looked at conditions and considered forces no more than two years in either direction from the date of the study. It is a premise of net assessment, however, that far longer time horizons, looking both backward and forward, are necessary.

# **Net Assessment versus Systems Analysis**

Another alternative to net assessment is systems analysis, a methodology which reached the peak of its bureaucratic power in the early 1960s when Robert McNamara was America's secretary of defense.<sup>2</sup> It is a mode of thought--a school of strategic analysis--in its own right, and it continues to exert a powerful influence over both the academic and the bureaucratic communities of analysts. Indeed, the Office of Program Analysis and Evaluation in the Pentagon, now headed by an Assistant Secretary of Defense, represents the institutionalization of this mode of analysis. Systems analysis draws on economics and the skills of operations research (which is considerably more technical and focused) to answer the needs of decisionmakers about questions of military sufficiency and force structure design.

To understand the differences between systems analysis and strategic net assessment we should understand four critical differences between them.

## Methodology

Systems analysts tend to focus on a single preferred approach to setting up a problem. To be sure, analysts often have different pet models or measures of effectiveness, but it is extremely rare to find an individual analyst using several methodologies. Rather, systems analysts attempt to find the key method or formula for understanding military balances. For the most part, they turn to firepower-scoring systems as ways of making opposing forces comparable to one another. Strategic net assessment, by way of contrast, is resolutely eclectic. A wise net assessor will use many methods--including those of systems analysis, to be sure, but also war gaming, historical analogy making, and traditional forms of reasoning, such as that embodied in the great state papers of Winston Churchill as he surveyed the world scene in December 1942.<sup>3</sup>

Systems analysis, like much of modern social science, relies heavily on deduction. That is, it seeks to discover the truth by reasoning from first principles, and generating short, axiomatic, and abstract propositions which it then tests (sometimes) against external reality. Strategic net assessment is more inductive--an approach in bad odor with some contemporary philosophers of science, but which has more to be said for it in this field.<sup>4</sup> In practice, most scientists interested in discovery rather than methodology mix induction and deduction, and think rather little of it. Another way of putting it is that strategic net assessment is highly empirical and fact-oriented. Those who

practice it do not search for the best theory, preferring instead to probe the contours of reality, scanning the data for anomalies and trends, continuities and oddities. Those who do net assessment best are more likely to have the skills of the investigative journalist, the historian, or the old-fashioned general practitioner, than those of the theoretical physicist, the game theorist, or the student of modern philosophy.

Systems analysis makes claims to scientific method and rigor, and ultimately to something approaching scientific knowledge about military matters. Strategic net assessment, more modestly, hopes to get a handle on pieces of large, infinitely complicated, and interconnected problems. Ironically, its practitioners may be closer to modern science--to the concepts underlying the mathematics of "chaos," for instance--than the systems analysts who appear to believe in Newtonian certainties.<sup>5</sup>

### Attitudes to Numbers

Systems analysis rests heavily on quantitative analyses of military balances, in part because this seems "scientific." To be sure, analysts usually begin their studies by acknowledging the importance of intangibles--particularly political calculations and what is sometimes called "military judgment." On occasion they may even list some of the key non-quantifiable issues involved in a particular estimate. In practice, however, they then ignore these issues, letting their analyses rest on unexamined assumptions (with respect to coalition warfare, for example). Strategic net assessment, by way of contrast, though it studies various quantitative aspects of military balances, understands that first order questions must be tackled, even if the range of answers appears vague or indefinite. One may illustrate the difference as follows: In the past, for most systems analysts, the questions of how a NATO/Warsaw Pact war in Europe might start was of importance chiefly because of the differential mobilization rates implied. Thus, the range of issues they investigated concerned merely the lag time between the mobilization of the two blocs, and how many days after mobilization a war broke out. A sound strategic net assessment, however, would treat in extenso the question of why war might break out as a fundamental problem, for this could shape the nature of the ensuing conflict. It would, for example, explore the likely coalitional solidity of the two sides under different scenarios. And this exploration of intangibles is, as we shall see, merely a beginning.

### Frame of Reference

Most systems analysts, following what they take to be scientific method, believe in the necessity and desirability of simplification. Hence, they tend to confine their analyses to possible campaigns waged in clearly defined areas of the world. The method, therefore, is analytic in the strict sense, that is, it seeks understanding by breaking something into its component parts. In theory, at any rate, if one were to add up a set of systems analysis campaign studies one would have a picture of war. Net assessors, by way of contrast, are uncomfortably aware of the essential arbitrariness of most geographical and other boundaries used for such studies (e.g., those that look at the NATO/Warsaw Pact balance on the inter-German border alone, without looking as well at Austria and Denmark). Some arbitrary assumptions of this kind are necessary, but they must always come under scrutiny. Net assessors remind themselves that any particular study is only a piece of a larger conflict, be it war or peacetime competition. In Clausewitz's words, in war "more than elsewhere the part and the whole must always be thought of together."<sup>6</sup>

### The Central Question

One sees the root of the differences between systems analysis and net assessment when one looks at the core question at the heart of the two approaches to weighing military balance. Systems analysis asks, "How much is enough?" which Alain Enthoven and K. Wayne Smith appropriately chose as the title for their book on the subject. This implies (1) that we can know, with fair precision, how much military force is indeed required in any situation. This implies that we can measure military power relatively easily and, again, precisely (2) that we can turn to analysis for focused answers to immediate policy questions. The second point illustrates a possible corruption of systems analysis, which the more careful practitioners of the discipline understand well: a relentless focus on getting "the answer" to a particular problem may corrode the integrity of the analysis. Systems analysts seek to influence day-to-day decisionmaking. As a result, they put a premium on definite conclusions, in a business where certainty is intrinsically elusive, and one's political beliefs and career incentives can skew one's judgment. Net assessors are not intrinsically more decent people, but they do ask more open-ended questions: "What is the nature of our current competition? If war broke out tomorrow, what might it look like? What issues should policymakers consider as they look five or ten years ahead?" As a result, they have fewer incentives to wrap themselves in a cloak of scientific certainty.

These criticisms of the estimate of the situation and of systems analysis certainly do not mean that either approach is

valueless. Far from it. Net assessment, however, is something different, although it draws on the best elements of the methods of both--the comprehensive inventory-taking of the estimate of the situation, for example, and the thoughtful search for measures of effectiveness characteristic of good systems analysis. It should be noted, however, that the three different approaches are likely to appeal to different kinds of personalities, and work best in different analytical settings. We will return to this issue at the end of this paper.

## A Net Assessment Template

It appears that the Soviets believe in the possibility of a single, comprehensive net assessment.<sup>7</sup> Such a wildly optimistic view has its roots in Marxist-Leninist claims to understand society scientifically, and at a time when such claims have shown themselves almost comically hollow one may doubt them. A more reasonable path is that taken in the recent annual report of the Secretary of Defense, which lists two broad kinds of net assessments.<sup>8</sup> One kind is chiefly geographical: it looks at, for example, the balance in East Asia, Central Europe, Central America, and in space. The other is functional: it includes studies of the maritime, central nuclear, and power-projection balances. Of course this does not exhaust the list of possible balance assessments. The balances noted here overlap, and this should be considered a strength, not an indication of analytical sloppiness. Forces have more than one use, military competition in peace and war takes place on different planes and at different times, and the totality of the US-Soviet competition is so great that some duplication of study is not a vice, but a cardinal virtue.

While each of these possible balances must be done in its own way, five key questions or concepts occur in virtually all:

### How should we think about the balance?

This, obviously, is the first and most important of all questions, to which the answers are rarely evident. This section of a balance study deals with a range of issues, including such mundane matters as the physical limits of the area studied, which may not necessarily coincide with conventional demarcations (for example, one might study a NATO/Warsaw Pact confrontation with reference to Swedish and Swiss participation, or overlooking some of the conventional command boundaries between AFNORTH and AFCENT). Two particular subsets of issues emerge in this section. First, what are the politics of the area or subject under consideration? What objectives do the two (or more, if there are more) sides have? What constraints born of domestic politics shape their capabilities and preferred strategies?

Secondly, one must ask which standards of comparison--"measures of effectiveness," to use the language of operations research--are the most important. A thoughtful discussion of which measures to focus on can be almost as useful to a net assessment as the ensuing analysis that then applies them. Net assessment differs from systems analysis, in part, because it requires extensive consideration of measures of effectiveness,

and frequently the use of several such measures side by side. For example, in comparing the US-Soviet military competition in space one might look not only at the sophistication of the respective countries' satellites, but at the launcher throwweight they possess, the vulnerability of their launch facilities to various kinds of disruption, and their flexibility in times of crisis and war. Above all, one would seek to measure the relative effectiveness of the two sides' space systems not only with respect to uniform engineering or tactical criteria, but with respect to operational styles and strategic requirements as well. When comparing the US and Soviet navies, for example, side by side comparison of individual ships or even of fleets means very little without an understanding of what governments desire those navies to do in wartime.

### Trends

Net assessment looks at long-term trends. In particular, it studies patterns of behavior that go back twenty years, and sometimes more, and it attempts to look ahead five or ten years. This is a particularly distinctive feature of American net assessment, and an extremely important one first, because it gives decisionmakers a sense of the long-term directions and impulses which are often submerged in the hurly burly of day-to-day office routine. When assessors get such fundamental facts wrong they set themselves up for serious mistakes. Thus, in the 1930s British intelligence agencies first underestimated, than overestimated the magnitude and pace of the German buildup. Consequently they induced first complacency, and then excessive alarm among the Cabinet and the Chiefs of Staff.<sup>9</sup>

Secondly, long-term trend analysis enables one to capture an extremely important concept: the growth of military stock. If one country outspends another in key areas by only a slight margin, the cumulative consequences can nonetheless be tremendous. In the case of the United States and the Soviet Union, it became apparent to some in the early 1980s that even large US defense budgets could not compensate within a couple of years for the steady edge in Soviet military investment that had built up over the preceding decade and a half. The conclusion to be drawn was that it made more sense to invest in weapons systems and tactical and operational approaches that had high leverage--i.e., "competitive strategies" that would render obsolete large portions of the Soviet arsenal, or which would impose disproportionate costs on the Soviets in the forms of countermeasures of various kinds.

## Concepts of Operation

Different armies fight differently; indeed, even within one country military organizations may take radically different approaches to battle (this is true, for instance, of the United States Army and Marine Corps). Yet this simple fact has rarely worked its way into large scale comparative assessments of fighting forces. Net assessment requires thorough understanding of an opponent's style of warfare, and an effort to see how it interacts with one's own. In order to get beyond mere "bean counting"--the tallying up of numbers of tanks, aircraft, and artillery pieces--it is necessary to understand how each side characteristically operates its forces, and then to speculate as intelligently as possible about the significance of those facts.

The obstacles to work of this kind are considerable. After the Spanish Civil War, for example, French intelligence noticed that the Wehrmacht had begun to invest in heavy tanks and large quantities of antitank guns. The French read this to indicate that the Germans had come around to their views about the role of the tank in modern warfare, namely, that it could most usefully serve as a supporting arm to the infantry, but that it could not be the centerpiece of modern tactics. This was, of course, hardly the case. A similar case is that of the US Navy as it gauged its prospective Japanese opponents during the 1930s. Although the Navy was vaguely aware that the Japanese intended to fight a series of attritional battles using cruisers and destroyers operating at night, it failed to detect the thoroughness of Japanese preparations for that kind of warfare--the disastrous battle of Savo Island on the night of August 8-9, 1942, which cost the Allies four cruisers (the Japanese lost none) and a thousand dead, was the result.

To understand an opponent's concept of operations requires not merely the perusal of his field manuals (although that is clearly important), but a grasp of the philosophy of war that animates his approach to battle. It requires as well an understanding of the culture of his decisionmaking, which is more difficult to come to terms with than his tactical routines; indeed, even when one is engaged in battle with an opponent his fundamental traits may still be elusive.<sup>10</sup> Thus, British and American generals comforted themselves during World War II with the thought that their German opponents were thorough and disciplined, but rigid and schematic in their approach to war. In fact, the Germans were a creative foe, who delegated far more responsibility to junior officers than did either of the Anglo-Saxon armies, and such escapades as the invasion of Russia reveal far more haphazard planning (particularly in the logistical area) on the part of the military than anyone realized at the time.

If it is dangerous to misgauge an opponent's concept of operations initially, it is almost as perilous to think it

static. Such a misreading occurred, to some extent, in Israel in the years before the Yom Kippur War of 1973.<sup>11</sup> Although the general staff of the Israel Defense Forces knew very well indeed the order of battle of its Arab opponents, the weaponry they had available and their basic plans, they failed to see how their enemies' fundamental approach to war had changed, and how old characteristics (the steadfastness of peasant soldiers fighting a defensive battle, for example) and new operational planning (e.g. for a broad frontal assault across the Suez Canal) had created an entirely new kind of threat.

Net assessors must consider an opponent's concept of operations in two other ways. First, they must look at how it interacts with their own organizational routines, preferences, and decisionmaking culture. This requires a look at the total picture on both sides, which may be rather less reassuring or self-flattering than the usual horizontal comparison of individual pieces of equipment or small units. For example, in the 1970s and 1980s American defense analysts often painted a relatively rosy picture of the conventional balance in Europe because they believed--correctly, it would appear--that American and West German army units were better trained and equipped, man for man and battalion for battalion, than their Soviet counterparts. This was true, but it was only part of the picture; it did not take into account the Soviet concentration on the operational level of war, or the measures the Soviets had taken to compensate for the relative inefficiency of their smaller units. Net assessors must understand that all military capabilities are relative: they do not ask whether the enemy is efficient, in some general sense, at conducting certain kinds of operations, but how he is likely to do against one's own side.

Perhaps most difficult of all in this part of net assessment is the attempt to understand how the opponent views the balance--the other side's net assessment. Such an understanding of the opposing side's view has a number of uses: it may help assess the likelihood of war (how does the enemy assess his chances?), of peacetime trends (does the enemy think he is behind in certain areas into which he will pour resources?), and finally it serves as a check on one's own calculations (which may be too rosy or too grim). Winston Churchill once remarked, "Always remember, however sure you are that you can easily win, that there would not be a war if the other man did not think he also had a chance." All net assessments are provisional, and one might paraphrase Churchill to say that strategic competition would not occur if the other side thought its position hopeless; and there might not be peace if the other side thought it could win the war.

## Asymmetries

To do net assessment properly one must focus on the fundamental asymmetries between two potential opponents, including differences of organizational structure, political purpose, and operational objectives. Some of these differences are fairly obvious: for example, the United States' Navy's interest in sea control during a possible war with the Soviet Union has been fundamentally different from the USSR's interest in sea denial, which is normally a simpler mission. In the Arab-Israeli context, there has always been a fundamental asymmetry between the size and economic resources of the two parties to the conflict, and this has injected a note of pessimism into Israeli strategic calculations since the state was created.

An analysis of asymmetries, however, must go beyond crudely obvious differences of political purpose, economic strength, and geographical location. In the Arab-Israeli case, for instance, it was long assumed that time worked on behalf of the Arab coalition opposed to Israel, when this was, in fact, not the truth. To be sure, economic growth in countries such as Iraq, Syria, and Egypt made them far more formidable competitors with Israel, but other pressures operated as well. The longer the Arab-Israeli conflict went on, the harder it was for Arab states to act in accordance with the often-expressed belief that the very existence of Israel was intolerable. Moreover, time had the effect of allowing other conflicts (the Iran-Iraq War for example) to transform the patterns of foreign policy in ways favorable to Israel.

Asymmetries change over time. New generations of weaponry may increase or decrease the quality of soldiers required to operate them; prevailing modes of war may make particular kinds of terrain more or less valuable, greater or lesser obstacles to movement. The beginning of wisdom in most conflicts, however, is the understanding that the two sides are very different in most key respects, a realization captured in Thucydides' Peloponnesian War, when the prudent Spartan King Archidamus lectures his countrymen about their opponent:

In a struggle with a people who live in a distant land, who have also an extraordinary familiarity with the sea, and who are in the highest state of preparation in every other department; with wealth private and public, with ships, and horses, and heavy infantry, and a population such as no one other Hellenic place can equal, and lastly a number of tributary allies--what can justify us in rashly beginning such a struggle? Wherein is our trust that we should rush on it unprepared? Is it in our ships? There we are inferior; while if we are to practise and become a match for them, time must intervene. Is it in our money? There we have a far greater deficiency. We neither have it in our

treasury, nor are we ready to contribute it from our private funds. Confidence might possibly be felt in our superiority in heavy infantry and population, which will enable us to invade and devastate their lands. But the Athenians have plenty of other land in their empire, and can import what they want by sea. Again, if we are to attempt an insurrection of their allies, these will have to be supported with a fleet, most of them being islanders. What then is to be our war?

The question, "What then is to be our war?" emerges from a study of asymmetries at many different levels, understanding how evanescent those asymmetries might be. At the time of the Munich crisis in 1938, for example, the British and French seem not to have understood that the Wehrmacht, and in particular the Luftwaffe was a far more fragile organization than their own armed forces, because of its rapid expansion.<sup>12</sup> On the other hand, the British campaign in Burma in 1945 revealed a superb understanding of the differences between British Imperial and Japanese forces, their styles of operation as well as their structural composition.<sup>13</sup>

### Scenarios

One of the most common analytical ruts is that of the "canonical scenario," the base case which analysts study and explore, but whose first assumptions they rarely question. In the case of the NATO/Warsaw Pact balance there have been several, distinguished by relative mobilization times (with, usually, a three-day lag between the two pacts). In the United States during the 1930s it was also a mobilization scenario, in which it was assumed that the United States would commence full-scale war preparedness at a given moment ("M-Day"). Most general staffs, although they prepare a variety of contingency plans, have one pet scenario for the outbreak of war, a view of the future with which they feel most comfortable, and to which they devote most of their attention. In 1914 general staffs had (or could have had) more choices than they liked to admit, but they too suffered from the tyranny of the "canonical scenario." Yet invariably, wars never quite fit prewar images of them. Some allies do not participate as fully as expected or at all; the enemy has unexpected reservoirs of strength (for example, the German use of reserve troops to bolster their front line in 1914); the war begins with a surprise attack, or in a different geographical area than expected.

It is a mistake to think that elaborate prewar planning can cover all major scenarios for war—it cannot. But good net assessment requires that a range of scenarios be considered. Decisionmakers and planning staffs need to understand the variety of wartime possibilities that they may encounter—if only to be

resilient enough to cope with an unexpected turn of events. A crude form of such thinking was embodied in the American Rainbow plans immediately before the US entry into World War II, and the exercise was useful given the limited relevance of virtually all prewar planning after December 1941.

Multi-scenario analysis, however, will not necessarily come easily to analytical staffs, who may be more at home with combat modeling and planning than with the political-military speculation required to devise interesting cases. Moreover, some of the assumptions to drive those scenarios (about the degree of surprise suffered, or the cohesiveness of one's own coalition, or the effectiveness of one's forces) may be controversial or acutely unwelcome to established bureaucracies. Some of the most important variables in the real world, however, are precisely those. This in turn means that governmental net assessments must often be closely held, not only for their classified information content, but because of their political and bureaucratic sensitivity.

# Practical Problems of Net Assessment

## Data

An office of net assessment will be not only a voracious consumer of data, but a demanding, and sometimes even an irritating one. In order to perform its task properly it needs access to tightly held information about one's own forces, their plans, readiness levels, and capabilities, which can be even harder to obtain within the government than information about an opponent. One's own armed forces may as a matter of principle be quite unhappy about providing such information to a civilian agency (as, I shall argue below, an office of net assessment should be). They may see it as a competitor in conducting the functions of a general staff, or as a potential supplier of bureaucratic dynamite to organizational rivals.

Nor will the intelligence community, which generally sees itself as providing information services to the rest of the government, be all that much happier. The analytical culture of net assessment is one of relentless skepticism, and hence such an office will be asking questions that intelligence agencies are often reluctant to answer, *viz.*, "how do you know?" Moreover, like detective Sergeant Joe Friday on the American television show *Dragnet*, net assessors will often be asking for "just the facts," and less in the way of interpretation or analysis. And some of those requests for information may be of the kind not routinely collected or maintained, such as long-term historical data normalized for different counting rules or methods of collection.

Often, net assessors will seek extremely fine-grained data about both their own and the other side. A good example of the use to which this can be put is the net assessment of US and Soviet tank crews performed by the US Army in cooperation with the OSD/Net Assessment in the late 1970s.<sup>14</sup> A prolonged and careful study revealed some disquieting facts about the relative strengths and weaknesses of US and Soviet training. Although American troops were three-year volunteers as opposed to the Soviets' two-year conscripts, the average Soviet soldier was in the same job for eighteen months versus six for the American. The former had more frequent gunnery training, more extensive and imaginative use of simulators, and better training for mine and air warfare than his American counterpart. Thus, meticulous research revealed that the simple picture the US Army had had of the "otherness of the enemy" was at variance with the facts.

### Supporting Studies

It should be noted that not all of the data most useful to net assessors is highly classified. Indeed, large amounts may be completely overt, and involve the kind of research usefully commissioned from outside contractors or academics. A prominent example in the American case is work on Soviet operational style in war derived from a sifting of the vast overt Soviet literature on such matters (the work by Nathan Leites, Chris Donnelly, Phillip Petersen, John Hines, and Notra Trulock comes to mind). Sometimes such work taps materials neglected by government analysts, who may be so overcome by the wealth of information collected from secret sources that they fail to probe as adequately as they might the unclassified works available on the outside.

There are two other cases in which an office of net assessment may wish to draw on outside studies. One is for what Samuel Huntington has called "policy-relevant basic research," particularly in history. Works such as Ernest May's Knowing One's Enemies, a study of European and Japanese threat assessment before the world wars, or the three-volume Military Effectiveness studies edited by Allan Millett and Williamson Murray, are particularly good examples of this kind of work. A second kind of work may bear more directly on the problems faced by net assessors: issues so murky that one wishes a second opinion, as it were, from sources outside the intelligence community. Thus, studies of the Soviet economy performed by emigre economists have suggested--correctly, it would appear--that it is in far worse shape than has been indicated by the computer models used by the Central Intelligence Agency. Whereas CIA estimates had suggested that the Soviet economy was roughly half that of the American, emigre and dissident Soviet economists suggested that the true figure was more like a third, or even less.<sup>15</sup>

### The Organizational Design and Bureaucratic Politics of Net Assessment

Good net assessment is, by and large, an organizational product. While particular assessments require a single supervisor, it is very hard to see how a single researcher/analyst could produce a useful study completely on his or her own. What are the characteristics of a net assessment organization? First, it need not be large (say, more than a dozen people) because it can tap external sources of analysis. And indeed, like most research operations it will be most productive if kept small. A mix of civilians and professional officers would appear to be useful, and it is best if both have a combination of operational experience and academic training in various fields. Business degrees, PhDs in philosophy as well as

in electrical engineering--the more diverse the mix the better. Intellectual eclecticism is the hallmark of good net assessment.

It is essential that the director (and desirable that his deputy) be civilians, for three reasons. First, this ensures continuity. In the American military system, at least, it is virtually impossible to keep a serving officer in the same position for more than two or three years, particularly if he is talented and still on the rise. Like an academic institution, which it resembles in some (though by no means all) respects, an office of net assessment requires a mixture of longevity and turnover in its members, and this is rarely possible in a purely military environment. Secondly, it is essential that net assessment retain a policymaking perspective, and that is generally easier for a civilian than an officer, if only because officers like to think of themselves as being apolitical technical experts. Sound net assessment requires a willingness to ask tough political questions, and although there are exceptions, most officers do not feel comfortable doing so. Thirdly, a civilian director is better suited to shield both such an office and (to a lesser extent) its members from the pernicious consequences of military hierarchy. This has an external dimension--warding off attacks by senior officers offended or upset by a particular analysis; and an internal one, establishing a free-wheeling atmosphere in which rank is immaterial to the basic work.

An office of net assessment must keep a low bureaucratic profile. It will handle, obviously, extremely important information, gathered from one's opponents as well as one's own organizations. But just as importantly, its analyses will always have the potential to become weapons in intra-organizational struggles for budgets and missions. Thus, the core documents of such an office should have extremely restricted distribution, that is, they should be funnelled directly to senior defense decisionmakers. On the other hand, the key concepts of net assessment and the unclassified supporting studies that aid it merit wide distribution, in furtherance of improved strategic thinking across the board. In the final analysis, however, the effectiveness of such an office rests not on its members but on decisionmakers. If a Secretary of Defense is more interested in day-to-day or budgetary affairs than in mid- and long-term strategic planning, the studies produced by such an office will have intellectual significance but no other. Although such an office should attempt to "sell" its products to senior leaders, it is not guaranteed success in so doing.

## Future of Net Assessment

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 gave responsibility for net assessment, in part, to the Joint Staff supporting the Joint Chiefs of Staff. In my view this was a mistake, for reasons implicit in the arguments laid out above. The military perspective has tended to be short term, the military personnel system is unsuited to supporting such long-term political-military research, and the inclination of most military analysis organizations is, with notable and praiseworthy exceptions, toward the formulaic and machine-driven study, rather than the sort of work described above. In addition, there is a danger that "net assessment" can become a buzz word, a slogan to be hurled about in executive-congressional debates about the defense budget, which will gradually be drained of real meaning.

In the long term, a more serious problem is emerging from the developments in world politics and the global distribution of political, economic, and military power. Net assessment was difficult even when performed against an opponent as intellectually and operationally conservative and stable as the Soviet Union. Now, however, net assessment needs to be done in new areas of the world, against newly emerging threats. And even in performing US-Soviet net assessments, the old verities are no longer assured. The cohesion of the Soviet empire has been shattered, Soviet society itself is showing enormous strains only guessed at a couple of years ago, and Soviet military doctrine is in flux. A technological revolution is transforming the nature of conventional warfare. Ironically, perhaps, just as the American government was beginning to develop a really sound understanding of its chief opponent, that opponent began to change his nature in profound ways. Indeed, it is conceivable that that opponent will self-destruct within a few years.

The battle for sound net assessment has been a struggle, in some respects, for intellectual creativity and flexibility in a line of work characterized by dogma and dangerous simplification. Today, the United States faces a different kind of competition with its old opponents, and new kinds of competition with other states in different arenas, some political-military, some not. In the new order, whatever its final shape, the task of net assessment will lie less in beating back the unwarranted certainty of over-eager modelers, than in the rendering of coherence out of strategic chaos. That will prove an intellectual and policymaking problem more difficult and complicated than those with which it has been occupied hitherto.

## Notes

<sup>1</sup> Marshall's writing on the subject is sparse, but the following three papers are of particular interest: "Problems of Estimating Military Power," P-3417 (Santa Monica: RAND, 1966); "A Program to Improve Analytic Methods related to Strategic Forces," Policy Sciences, No. 15 (1982); "Arms Competitions: The Status of Analysis," in Uwe Nerlich, ed., The Soviet Asset: Military Power in the Competition Over Europe (Cambridge: Ballinger, 1983).

<sup>2</sup> See Eliot A. Cohen, "Guessing Game: A Reappraisal of Systems Analysis." In Samuel P. Huntington, ed., The Strategic Imperative. Cambridge: Ballinger, 1982, pp. 163-191.

<sup>3</sup> See, for example, the papers written by Churchill en route to the ARCADIA conference in December 1941, shortly after American entry into the war. Warren F. Kimball, ed., Churchill and Roosevelt: The Complete Correspondence, Volume I, Alliance Emerging (Princeton: Princeton University Press, 1984), pp. 294-308.

<sup>4</sup> Something like this approach is advocated in James Q. Wilson, Bureaucracy: What Government Agencies Do and Why They Do It (New York: Basic Books, 1989), ix-xii.

<sup>5</sup> I have been influenced here by a fascinating, unpublished paper by James G. Roche and Barry D. Watts, "Choosing Analytic Measures," November 18, 1989.

<sup>6</sup> Carl von Clausewitz, On War, Michael Howard and Peter Paret, trans., 2nd edition (Princeton: Princeton University Press, 1982), p. 75. Note that this statement is found in the first paragraph of the first chapter of the first book--which indicates the importance Clausewitz assigned to this proposition.

<sup>7</sup> See Graham Hall Turberville, Jr., ed., The Voroshilov Lectures: Materials from the Soviet General Staff Academy, Volume I (Washington, D.C.: National Defense University Press, 1989), pp. 55-92 ("Principles and Content of Military Strategy").

<sup>8</sup> Frank C. Carlucci, Annual Report to the Congress of the Secretary of Defense, Fiscal Year 1990 (Washington, D.C.: GPO, 1989), pp. 13-32.

<sup>9</sup> See Wesley K. Wark, The Ultimate Enemy: British Intelligence and Nazi Germany, 1933-1939 (Ithaca: Cornell University Press, 1985).

<sup>10</sup> See Eliot A. Cohen, "Analysis" in Roy Godson, ed., Intelligence Requirements for the 1990s. Washington: National Security Information Center, 1989, pp. 71-96.

<sup>11</sup> See the discussion in Eliot A. Cohen and John Gooch, Military Misfortunes: The Anatomy of Failure in War (New York: The Free Press, 1990), pp 95-131.

<sup>12</sup> See Williamson Murray, The Change in the European Balance of Power, 1938-1939: The Path to Ruin (Princeton: Princeton University Press, 1984), pp. 3-49.

<sup>13</sup> See the discussion in William J. Slim, Defeat Into Victory (1956; London: Macmillan, 1986), passim.

<sup>14</sup> "Net Assessment of US and Soviet Tank Crew Training" (Fort Monroe, Virginia: US Army Training and Doctrine Command, 1977).

<sup>15</sup> These estimates were incorporated into Andrew W. Marshall, et al., The Future Security Environment. Report of the Future Security Environment Working Group to the Committee on Integrated Long-Term Strategy (Washington, D.C.: Department of Defense, 1988) pp. 6-7, 92-95.