

Combatting Mind-Set

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When intelligence analysts cannot rely solely on factual evidence to address questions of concern to US national security, they have to begin to employ judgment. In effect, when we do not know, we *estimate*. And when analysts estimate they depend on what I will call *mind-set*. For the purpose of this article,¹ mind-set is the distillation of the intelligence analyst's cumulative factual and conceptual knowledge into a framework for making estimative judgments on a complex subject. Case studies on Agency analytic performance indicate that analysts and managers alike do not pay their dues to this powerful phenomenon. Analytic procedures and practices, herein called *tradecraft*, that do not ensure against or otherwise combat mind-set put the resultant assessments at high risk of either being wrong or being unread.

Inevitability of Mind-Set

Analysts rely on mind-set to bring to bear prior thinking as they process newly available but usually incomplete and ambiguous information. In circumstances where rigorous testing of assumptions and weighing of evidence is not practical, mind-set forms the basis for interpretation of how things usually work, say, in Israeli politics and for forecasting likely future developments (re the Middle East peace process). Other writers have called the same phenomenon "substantive biases" or "set of expectations."

The definition, again, assumes a level of complexity of subject matter and attendant ambiguity of information that require the analyst to make conditional judgments that interpret past and ongoing developments and seek to anticipate future developments. Klaus Knorr was one of the first scholars of intelligence analysis to spell out the analysts' reliance on their "set of expectations" in these circumstances.

It must be understood that the formulation of such a set by an intelligence service is both inevitable and indispensable. It is inevitable that, in doing their job, professionals will more or less deliberately build up the set. And it is indispensable because the set is a most valuable tool in performing timely, coherent, articulate and, on a probability basis, accurate intelligence. Without it, the current stream of information would be unmanageable and often paralyzingly ambiguous.²

Most subsequent students of the juncture between cognitive psychology and the analytic process, including Robert Jervis and Richard Betts,³ accept Knorr's judgment that reliance on mind-set is "both inevitable and indispensable." Yet the point deserves elaboration because some intelligence managers and outside critics argue that *elimination* of mind-set is needed to eliminate analytic error or failure.

The essential character of mind-set in the work of Agency analysts engaged in estimating is underwritten by four pervasive elements that characterize the intelligence environment: complexity of issues, attendant ambiguity, pressure of deadlines, pressure to predict:

- *Complexity*. As a rule of thumb, the more complex the issue the analysts address, the greater the uncertainty, the more urgent the need to estimate, and the greater the reliance on mind-set. Thus, the more that analytic judgments rely on understanding and anticipating the actions of a multiplicity of human players (including US policymakers), the less susceptible they are to management of the process according to the tenets of the scientific method. And to the extent that the analytic process has to serve policymaker needs and not pursuit of understanding for its own sake, analysts are regularly forced to move from what they know

to what they do not or cannot know: from Iraq's military capabilities, for example, to Saddam's military intentions, and then to his reaction to planned pressures against him. The analysts move, in effect, from reliance largely on evidence to reliance largely on surmise.

- *Ambiguity.* Incomplete and conflicting information usually attends complex issues. Increases in collection usually mean that the rate of growth of nonuseful information, "noise," will greatly exceed that of useful information, "signals." And advance of complex—especially, unprecedented—developments, analysts cannot be certain what will turn out to be a distraction from and what an indicator of pending events. The analyst's substantive biases provide a powerful but potentially dangerous tool for choosing.
- *Deadlines.* Whether deadlines reflect policy utility or merely bureaucratic convenience, they force relatively more reliance than would otherwise obtain on judgment and less on weighing evidence. Inelegant tasking, review, and coordination processes also serve as deadlines for the time allotted to analytic processes, and thus also increase reliance on mind-set.
- *Prediction.* Pressures to predict specific outcomes, at times regardless of the degree of uncertainty of the issue, further reinforce reliance on existing assumptions. These pressures were built into the analytic value system in the early days of the Agency, when optimism obtained about the power of first-rate scholarship to predict correctly future events, such as whether or not the USSR would place strategic missiles in Cuba in 1962. These pressures persist, especially at command levels, despite accumulating evidence of the disutility of single-outcome predictions on complex issues involving high levels of uncertainty. First, analysts generally find it extremely difficult to catch discontinuities and unusual developments, such as the fall of the Shah of Iran and of the Sandinista government in Nicaragua. Second, policy officials tend to be turned off by non-documentable predictions they see as politically unhelpful. Third, even openminded policymakers hesitate to invest major resources in response to analysts' predictions of dramatic changes or unusual threats, on which the evidence is by nature fragmentary and ambiguous.

Trade-Offs

When these factors are in play, analysts working tough issues must skimp on evaluating evidence, challenging assumptions, and seeking alternative explanations in favor of high and, at times, risky reliance on mind-set. Indeed, production units tend to favor those analysts who can table a battery of ready explanations regarding their substantive turf over those gifted merely with good technical analytic skills. Analysts, then, are paid to have their *mind-set* to judge whether or not "X" is more likely than "Y" in country "Z" *before* they read the daily traffic.

The good news? As Knorr indicates, well-developed insights do lead "on a probability basis, [to] accurate intelligence." To the extent that mind-sets are based on much sweat equity, they can be relied upon professionally in most cases. The odds favor judgments that most stable countries will continue to be stable, most ruinous economic policies will continue to produce ruin, most long-surviving national leaders will avoid disastrous initiatives. Moreover, unidirectional argumentation does help get the production out on time, and it also facilitates terse and, at times, elegant drafting.

The bad news? Mind-set tends to distort how analysts perceive new information. Analysts by and large see more vividly and pay more attention to information that is consonant with what they expect to see. As experts, they are trained to dismiss what seems to be noise, if not also nonsense, on their accounts. This makes the estimative process vulnerable in anticipating unusual developments: revolutions and other political watersheds; military surprise; economic turning points; S&T breakthroughs. For example, Agency analysts missed first the sharp rise in OPEC influence in the 1970s and then the sharp drop in OPEC influence in the 1980s. In some instances where the onset of dramatic developments was missed, the more expert the analyst—the more images of the *usual* in his or her mind—the longer it took to see the onset of the *unusual* development.

Sadly, the basic trade-off for mind-set is much like that for nuclear power plants: it works wonders to get the production out—in between disasters.

Strategies for Combatting Mind-Set

If intelligence analysts cannot dispense with reliance on mind-set when making estimative judgments, they must then find strategies that simultaneously harness its impressive energy and limit the potential damage. I recommend a strategy of two complementary, indeed overlapping, elements: mind-set enhancement and mind-set insurance.

Mind-Set Enhancement

The recommendations for using mind-set more efficiently rest on studies that attach insights from the professional literature on cognition, perception, and decisionmaking to the process of intelligence analysis. The work here of former Agency analyst Richards Heuer is especially noteworthy.⁴

The essential argument for asking experienced analysts to pay greater attention to their analytic tradecraft starts with recognition that the free-ranging human mind is the most creative analytic tool in existence. But it quickly reaches limits in three important capacities:

- The volume of stored information that can be recalled from memory for use in problem solving, especially the inaccessibility for “working memory” of bites of information and insight that are used infrequently.
- The number of variables that can be brought to bear coherently, as the processes first of thinking and then of writing force the analyst toward what, for lack of a better term, can be called premature simplification.⁵
- The tracking of the consequences for the whole set of variables or volatile factors of changes in one of the factors under consideration.

Thus, analysts need simple tools and procedures to supplement the power of working memory and to bring to bear on complex and ambiguous issues more of their vast informational holdings and reasoning potential. These tools are all but indispensable for challenging the key assumptions on which the analysts’ bottom line estimative judgments are based.

Now, by whatever name they prefer, experienced analysts already rely on a variety of tools to jog and polish their analytic thinking. What is promoted here is more self-conscious, frequent, and disciplined use of devices that hold promise of wringing additional information, insights, and implications from their memory banks. The list that follows is selective and could easily be expanded from the inventories of veteran analysts, as well as from Heuer’s many articles.

- Talking aloud to stimulate alternative patterns of language and argumentation, in order to get through difficult analytic patches in a written draft.
- Thinking backwards—from a seemingly unlikely future event, to necessary intermediate developments, to present circumstances—to overcome the natural propensity to call forth assumptions and data that support the most likely outcome.
- Brainstorming, to enlarge the pool of potentially useful insights by lowering the threshold for consideration from “likely” to “possible.”
- Devil’s advocacy, which can take many forms, including presentation of the expert’s line of argumentation to colleagues who are short on direct substantive knowledge but long on the rules of logic, evidence, and inference.
- Structuring, or externalizing, the analytic process by writing down what is known and assumed about discrete parts of an estimative problem, in order to call forth more information and insight than the free-ranging mind can generate.

Structuring probably represents the most powerful and versatile, yet user-friendly set of tools for mind-set enhancement. Analysts who lean toward the reading-thinking-drafting mode of work can use structuring both “to keep themselves honest,” when drawn to a convenient generalization, and to overcome inertia, when no useful generalization can be summoned from past experience. By placing elements of a complex issue on a yellow pad or blackboard, analysts can evoke previously untouched information as well as connect previously unrelated ideas. Chronologies, for example, help make sure the

sequence of events is remembered correctly. Lists of key players and their priorities help test assumptions about alliances and enmities as well as about motivation and intentions.

Mind-set Insurance

The recommendation that analysts ensure against the limits of mind-set rises from examination of the analytic performance of the Agency and other intelligence services, including case studies generated for the "Seminar on Intelligence Successes and Failures." The argument here is that enhanced mind-set can still leave the analyst at high risk, especially regarding matters of high uncertainty: long-term developments in most countries, and short-term developments in such countries under stress as the former Soviet Republics, Cuba, and Iraq. Moreover, even when the analysts' proffered prediction is technically correct, the decisionmaker may find little utility from their labors to determine whether an event is 40 or 50 or 60 percent likely. Thus, analysts should be prepared to provide decisionmakers with values other than or in addition to single-outcome predictions.

Multiple Explanations and Projections. Roughly equal coverage of more than one political, economic, or military dynamic provides decisionmakers, among other values, with serious attention to their operational fears and hopes. Analysts can rank order the outcomes addressed, but implications and indicators for each scenario should show considered effort and not mere afterthought. Analysts now routinely use multiple explanations when compelled to by overwhelming uncertainty, such as recent National Intelligence Estimates on the former Soviet Union. Multiple explanations should also be considered whenever the most likely projection weighs in at under 70 percent, and the assumed less likely outcome(s) are fraught with important threats or opportunities for US security interests. A one-third contingency, for example, that country "X" will seriously threaten US interests deserves at least as much attention as the two-thirds contingency that hostile action will not occur.

Tackling More Specific Questions. Often papers and briefings that set out and answer specific questions will serve the decisionmaker's operational agenda better than a far more risky comprehensive assessment of the outlook for country "X." Data from interviews show that policymakers prefer "the rifle approach over the shotgun approach."⁶ I would guess, admittedly without benefit of a survey, that most intelligence papers executed in response to a request from policy officials have a narrower and simpler focus than those generated at the initiative of Agency managers. Besides, decisionmakers—experienced and otherwise—tend to think of themselves as accomplished analysts; and if they realize they cannot confidently predict "whither country 'X' over the next three years," they may not attach much stock to intelligence assessments that try to do so.

*Going for the Gray.*⁷ Analyst concentration on hard-earned insight into capabilities, relationships, and other information based on unique collection and research capacity frequently provides the decisionmaker with a precious commodity: greater working knowledge on what he or she has to deal with. Again, I would bet that much of the praise for National Intelligence Estimates and other assessments prepared during the recent Persian Gulf crisis had to do with gray material in boxes and matrices and tables rather than with black-or-white predictions.

Opportunity Analysis. Intelligence memorandums and briefings that provide explicitly actionable support for the implementation of policy by definition will be seen to be more useful by decisionmakers than essays that predict whether or not the already-adopted policy will be successful. Even comprehensive papers are likely to be taken more seriously if their key judgments point to opportunities for the United States to use leverage and limit damage in pursuit of policy objectives.

As with mind-set enhancement, managers and veteran analysts can table additional practical initiatives for mind-set insurance. These will include variations of the multiple projections approach, including "low-probability, high-impact" assessments, which provide disciplined speculative analysis on an important unlikely development. Further, by calling upon growing experience working in and with decisionmaking organizations, intelligence pros can add to the list of

the alternatives to predictive analysis that will serve the interests and needs of policy pros—and at the same time ease the burden on mind-set.

Tradecraft Recommendations

While the following recommendations for combatting mind-set address the circumstances of a hypothetical production division in a regional analytic office, similar measures should work as well in functional analytic offices:

- Make an inventory of the specific policymaking interests of the 10 or so top consumers, mostly deputy assistant secretaries in policymaking departments and NSC Staff directors. Give the resultant list a reality check by interviewing these decisionmakers or their aides and gatekeepers. Most of the 30 or 40 specific interests are likely to relate to the near-term requirements for implementing agreed policy. Others are likely to revolve around the need to generate and consider alternative strategies to advance broadly defined Administration goals. Still others, around avoiding unpleasant surprises.
- Make a complementary inventory of the division's current and prospective assets for serving these specific needs. While the division research program should also address over-the-horizon policy concerns, a healthy proportion should relate directly to building the capital to service identified existing needs.
- Concept papers and other planning documents should emphasize specific utilities for specific policymakers. And the review process should give as much time to "utility control" as to quality control.
- For new and journeyman analysts, make a clear distinction between the "writer's paper" (the research effort that ensures the analysts they know what they are talking about) and the "reader's paper" (what specific consumers need from a memorandum or briefing). As a project proceeds, its emphasis should shift from the events and prospects in Madrid, Managua, and Manila to the policy questions in Washington.

- Examine consciously the analytic challenges of a project. For example, after allowing some time for research but before serious drafting has started, task the analyst to produce a one- or two-page statement on (a) the level of difficulty of the project's key estimative issues, including degree of analytic uncertainty and quality of reporting, (b) the extant estimative assumptions, and (c) planned tactics for dealing with mind-set challenges (such as using devil's advocacy or multiple projections).
- In particular, encourage analysts to identify, structure, and examine critically the one or two assumptions that, if found faulty, could undermine the prevailing mind-set.
- Select experienced analysts to serve on a rotating basis as "mind-set coaches"—reviewing assessments for issues of mind-set, uncertainty, and policy utility. Consider pairing with another production division to swap personnel for this activity. As a rule, the less the critical reader knows about the substance of the paper, the more he or she will concentrate on the quality of argumentation. Reward the best "mind-set coaches" by making them branch chiefs.
- In general, provide an environment where matters of analytic tradecraft share pride of place with substantive expertise. Training for analysts, on the job and in the Office of Training and Education, should drive home two points: reliance on mind-set is both inevitable and dangerous; professional analysts take responsibility for combatting mind-set.

NOTES

1. This article is based on a memorandum prepared under contract for the National Intelligence Council in August 1991.
2. Klaus Knorr, "Failures in National Intelligence Estimates: The Case of the Cuban Missiles," *World Politics*, XVI:3 (April 1964), pp.461-462.
3. Robert Jervis, Richard Ned Lebow, Janice Gross Stein, eds., *Psychology & Deterrence* (1985), especially pp.1-33; Richard K. Betts, "Analysis, War, and Decision: Why Intelligence Failures Are Inevitable," *World Politics*, XXXI: I (October 1978).

4. Heuer makes his strongest case in a memorandum, "Breaking Mind-Sets," written in May 1991 under contract with the National Intelligence Council.
5. See Robert S. Sinclair, *Thinking and Writing: Cognitive Science and the Directorate of Intelligence*; 1984. Published by the Center for the Study of Intelligence.
6. The phrase was called to my attention by Frans Bax of the Office of Resources, Trade, and Technology; it is based on his studies of interview data.
7. I owe the phrase to Katherine Hall, Deputy Director of the Office of African and Latin American Analysis.