

EXCERPTS from

## Psychology of Intelligence Analysis\*

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### EXCERPT from the Introduction, by Jack Davis:

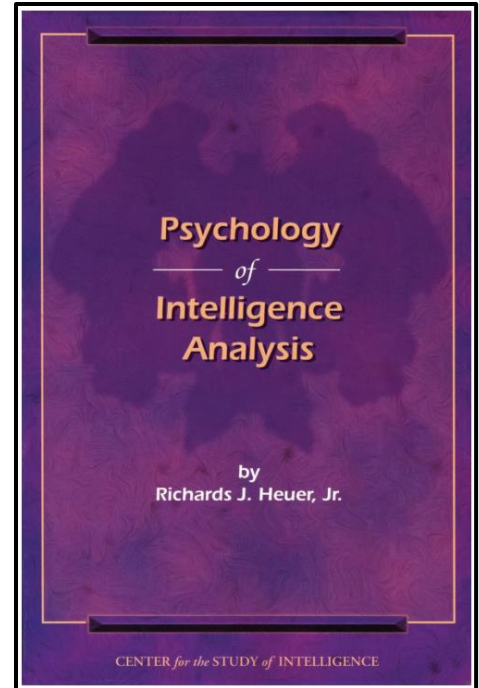
Heuer's message to analysts can be encapsulated by quoting two sentences from Chapter 4 of this book:

*Intelligence analysts should be self-conscious about their reasoning processes. They should think about how they make judgments and reach conclusions, not just about the judgments and conclusions themselves.*

### Heuer's Central Ideas

Dick Heuer's writings make three fundamental points about the cognitive challenges intelligence analysts face:

- The mind is poorly "wired" to deal effectively with both inherent uncertainty (the natural fog surrounding complex, indeterminate intelligence issues) and induced uncertainty (the man-made fog fabricated by denial and deception operations).
- Even increased awareness of cognitive and other "unmotivated" biases, such as the tendency to see information confirming an already-held judgment more vividly than one sees "disconfirming" information, does little by itself to help analysts deal effectively with uncertainty.
- Tools and techniques that gear the analyst's mind to apply higher levels of critical thinking can substantially improve analysis on complex issues on which information is incomplete, ambiguous, and often deliberately distorted. Key examples of such intellectual devices include techniques for structuring information, challenging assumptions, and exploring alternative interpretations.



Available in PDF free of charge at <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/psychology-of-intelligence-analysis/>

Heuer emphasizes both the value and the dangers of mental models, or mind-sets. In the book's opening chapter, entitled "Thinking About Thinking," he notes that:

[Analysts] construct their own version of "reality" on the basis of information provided by the senses, but this sensory input is mediated by complex mental processes that determine which information is attended to, how it is organized, and the meaning attributed to it. What people perceive, how readily they perceive it, and how they process this information after receiving it are all strongly influenced by past experience, education, cultural values, role requirements, and organizational norms, as well as by the specifics of the information received.

This process may be visualized as perceiving the world through a lens or screen that channels and focuses and thereby may distort the images that are seen. To achieve the clearest possible image . . . analysts need more than information . . . They also need to understand the lenses through which this information passes. These lenses are known by many terms—mental models, mind-sets, biases, or analytic assumptions.

In essence, Heuer sees reliance on mental models to simplify and interpret reality as an unavoidable conceptual mechanism for intelligence analysts—often useful, but at times hazardous. What is required of analysts, in his view, is a commitment to challenge, refine, and challenge again their own working mental models, precisely because these steps are central to sound interpretation of complex and ambiguous issues.

Throughout the book, Heuer is critical of the orthodox prescription of "more and better information" to remedy unsatisfactory analytic performance. He urges that greater attention be paid instead to more intensive exploitation of information already on hand, and that in so doing, analysts continuously challenge and revise their mental models.

Heuer sees mirror-imaging as an example of an unavoidable cognitive trap. No matter how much expertise an analyst applies to interpreting the value systems of foreign entities, when the hard evidence runs out the tendency to project the analyst's own mind-set takes over. In Chapter 4, Heuer observes:

To see the options faced by foreign leaders as these leaders see them, one must understand their values and assumptions and even their misperceptions and misunderstandings. Without such insight, interpreting foreign leaders' decisions or forecasting future decisions is often nothing more than partially informed speculation. Too frequently, foreign behavior appears "irrational" or "not in their own best interest." Such conclusions often indicate analysts have projected American values and conceptual frameworks onto the foreign leaders and soci-

eties, rather than understanding the logic of the situation as it appears to them.

## **EXCERPTS from PART IV—CONCLUSIONS:**

### Chapter 14

#### Improving Intelligence Analysis

### Checklist for Analysts

This checklist for analysts summarizes guidelines for maneuvering through the minefields encountered while proceeding through the analytical process. Following the guidelines will help analysts protect themselves from avoidable error and improve their chances of making the right calls. The discussion is organized around six key steps in the analytical process: defining the problem, generating hypotheses, collecting information, evaluating hypotheses, selecting the most likely hypothesis, and the ongoing monitoring of new information.

#### Defining the Problem

Start out by making certain you are asking—or being asked—the right questions. Do not hesitate to go back up the chain of command with a suggestion for doing something a little different from what was asked for. The policymaker who originated the requirement may not have thought through his or her needs, or the requirement may be somewhat garbled as it passes down through several echelons of management. You may have a better understanding than the policymaker of what he or she needs, or should have, or what is possible to do. At the outset, also be sure your supervisor is aware of any tradeoff between quality of analysis and what you can accomplish within a specified time deadline.

#### Generating Hypotheses

Identify all the plausible hypotheses that need to be considered. Make a list of as many ideas as possible by consulting colleagues and outside experts. Do this in a brainstorming mode, suspending judgment for as long as possible until all the ideas are out on the table. Then whittle the list down to a workable number of hypotheses for more detailed analysis. Frequently, one of these will be a deception hypothesis—that another country or group is engaging in denial and deception to influence US perceptions or actions.

At this stage, do not screen out reasonable hypotheses only because there is no evidence to support them. This applies in particular to the deception hypothesis. If another country is concealing its intent through denial and deception, you should probably not expect to see evidence of it without completing a very careful analysis of this possibility. The deception hypothesis and other plausible hypotheses for which there may be no immediate evidence should be carried forward to the next stage

of analysis until they can be carefully considered and, if appropriate, rejected with good cause.

### Collecting Information

Relying only on information that is automatically delivered to you will probably not solve all your analytical problems. To do the job right, it will probably be necessary to look elsewhere and dig for more information. Contact with the collectors, other Directorate of Operations personnel, or first-cut analysts often yields additional information. Also check academic specialists, foreign newspapers, and specialized journals. Collect information to evaluate all the reasonable hypotheses, not just the one that seems most likely. Exploring alternative hypotheses that have not been seriously considered before often leads an analyst into unexpected and unfamiliar territory. For example, evaluating the possibility of deception requires evaluating another country's or group's motives, opportunities, and means for denial and deception. This, in turn, may require understanding the strengths and weaknesses of US human and technical collection capabilities.

It is important to suspend judgment while information is being assembled on each of the hypotheses. It is easy to form impressions about a hypothesis on the basis of very little information, but hard to change an impression once it has taken root. If you find yourself thinking you already know the answer, ask yourself what would cause you to change your mind; then look for that information.

Try to develop alternative hypotheses in order to determine if some alternative—when given a fair chance—might not be as compelling as your own preconceived view. Systematic development of an alternative hypothesis usually increases the perceived likelihood of that hypothesis. “A willingness to play with material from different angles and in the context of unpopular as well as popular hypotheses is an essential ingredient of a good detective, whether the end is the solution of a crime or an intelligence estimate.”

### Evaluating Hypotheses

Do not be misled by the fact that so much evidence supports your preconceived idea of which is the most likely hypothesis. That same evidence may be consistent with several different hypotheses. Focus on developing arguments against each hypothesis rather than trying to confirm hypotheses. In other words, pay particular attention to evidence or assumptions that suggest one or more hypotheses are less likely than the others.

Recognize that your conclusions may be driven by assumptions that determine how you interpret the evidence rather than by the evidence

itself. Especially critical are assumptions about what is in another country's national interest and how things are usually done in that country. Assumptions are fine as long as they are made explicit in your analysis and you analyze the sensitivity of your conclusions to those assumptions. Ask yourself, would different assumptions lead to a different interpretation of the evidence and different conclusions?

Consider using the matrix format discussed in Chapter 8, "Analysis of Competing Hypotheses," to keep track of the evidence and how it relates to the various hypotheses.

Guard against the various cognitive biases. Especially dangerous are those biases that occur when you lack sufficient understanding of how a situation appears from another country's point of view. Do not fill gaps in your knowledge by assuming that the other side is likely to act in a certain way because that is how the US Government would act, or other Americans would act, under similar circumstances.

Recognize that the US perception of another country's national interest and decisionmaking processes often differs from how that country perceives its own interests and how decisions are actually made in that country. In 1989–90, for example, many analysts of Middle Eastern affairs clearly assumed that Iraq would demobilize part of its armed forces after the lengthy Iran-Iraq war so as to help rehabilitate the Iraqi economy. They also believed Baghdad would see that attacking a neighboring Arab country would not be in Iraq's best interest. We now know they were wrong.

When making a judgment about what another country is likely to do, invest whatever time and effort are needed to consult with whichever experts have the best understanding of what that country's government is actually thinking and how the decision is likely to be made.

Do not assume that every foreign government action is based on a rational decision in pursuit of identified goals. Recognize that government actions are sometimes best explained as a product of bargaining among semi-independent bureaucratic entities, following standard operating procedures under inappropriate circumstances, unintended consequences, failure to follow orders, confusion, accident, or coincidence.

### Selecting the Most Likely Hypothesis

Proceed by trying to reject hypotheses rather than confirm them.

The most likely hypothesis is usually the one with the least evidence against it, not the one with the most evidence for it.

In presenting your conclusions, note all the reasonable hypotheses that were considered. Cite the arguments and evidence supporting your 177

judgment, but also justify briefly why other alternatives were rejected or considered less likely. To avoid ambiguity, insert an odds ratio or probability range in parentheses after expressions of uncertainty in key judgments.

### Ongoing Monitoring

In a rapidly changing, probabilistic world, analytical conclusions are always tentative. The situation may change, or it may remain unchanged while you receive new information that alters your understanding of it. Specify things to look for that, if observed, would suggest a significant change in the probabilities.

Pay particular attention to any feeling of surprise when new information does not fit your prior understanding. Consider whether this surprising information is consistent with an alternative hypothesis. A surprise or two, however small, may be the first clue that your understanding of what is happening requires some adjustment, is at best incomplete, or may be quite wrong.

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### Exposure to Alternative Mind-Sets

The realities of bureaucratic life produce strong pressures for conformity. Management needs to make conscious efforts to ensure that well-reasoned competing views have the opportunity to surface within the Intelligence Community. Analysts need to enjoy a sense of security, so that partially developed new ideas may be expressed and bounced off others as sounding boards with minimal fear of criticism for deviating from established orthodoxy.

Much of this book has dealt with ways of helping analysts remain more open to alternative views. Management can help by promoting the kinds of activities that confront analysts with alternative perspectives—consultation with outside experts, analytical debates, competitive analysis, devil’s advocates, gaming, and interdisciplinary brainstorming.

Consultation with outside experts is especially important as a means of avoiding what Adm. David Jeremiah called the “everybody-thinks-like-us mindset” when making significant judgments that depend upon knowledge of a foreign culture. Intelligence analysts have often spent less time living in and absorbing the culture of the countries they are working on than outside experts on those countries. If analysts fail to understand the foreign culture, they will not see issues as the foreign government sees them. Instead, they may be inclined to mirror-image—that is, to assume that the other country’s leaders think like we do. The analyst assumes that the other country will do what we would do if we were in their shoes.

Mirror-imaging is a common source of analytical error, and one that reportedly played a role in the Intelligence Community failure to warn of imminent Indian nuclear weapons testing in 1998. After leading a US Government team that analyzed this episode, Adm. Jeremiah recommended more systematic use of outside expertise whenever there is a major transition that may lead to policy changes, such as the Hindu nationalists' 1998 election victory and ascension to power in India. Pre-publication review of analytical reports offers another opportunity to bring alternative perspectives to bear on an issue. Review procedures should explicitly question the mental model employed by the analyst in searching for and examining evidence. What assumptions has the analyst made that are not discussed in the draft itself, but that underlie the principal judgments? What alternative hypotheses have been considered but rejected, and for what reason? What could cause the analyst to change his or her mind?

Ideally, the review process should include analysts from other areas who are not specialists in the subject matter of the report. Analysts within the same branch or division often share a similar mind-set. Past experience with review by analysts from other divisions or offices indicates that critical thinkers whose expertise is in other areas make a significant contribution. They often see things or ask questions that the author has not seen or asked. Because they are not so absorbed in the substance, they are better able to identify the assumptions and assess the argumentation, internal consistency, logic, and relationship of the evidence to the conclusion. The reviewers also profit from the experience by learning standards for good analysis that are independent of the subject matter of the analysis.