

Government Foresight

Foresight means Questioning Ourselves: The Role of Structured Analytic Techniques, Creativity and Training

Interview with

| **Richards J. Heuer Jr.**, Author of Psychology of Intelligence Analysis and coauthor of Structured Analytic Techniques for Intelligence Analysis

| **Randolph H. Pherson**, Former National Intelligence Officer for Latin America; CEO, Globalytica, LLC; President, Pherson Associates, LLC

1. Kathrin Brockmann: Mr. Heuer and Mr. Pherson, you both have had long careers in which you made remarkable contributions to improve the quality of analysis in the US Government and elsewhere. What do you consider to be the milestones of your work dedicated to transforming analysis? Did foresight play a special role?

Richards J. Heuer, Jr.: The milestones in my work were the development in 1986 of the Analysis of Competing Hypotheses (ACH) methodology as one of two key elements of a methodology for analyzing Soviet deception during the Cold War. A second milestone is the publication of Psychology of Intelligence Analysis in 1999, which deals with the cognitive and psychological limitations and challenges analysts face in their everyday work when processing and making sense of information. Only a few years after its publication, this book played

a significant role in understanding the failure to foresee how al-Qaida would launch an attack on the US Homeland in September 2001 and the failure to find weapons of mass destruction in Iraq in 2005 as well as in buttressing the recommendations for how to prevent such failures in the future by finding new and improved approaches to analysis. There was a need for a more systematic use of techniques to challenge conventional wisdom and for thinking in terms of alternative explanations or hypotheses.

Randolph H. Pherson: Since some initial attempts to improve systematic and transparent analysis in the 1980s, there has been slow but steady progress in the use of such techniques. One milestone for me was our introduction of Alternative Futures Analysis to the Intelligence Community in the 1990s while I was National Intelligence

Officer (NIO) for Latin America. We engaged analysts, academics, and policymakers in collaborative workshops to generate robust scenarios of how various Latin American countries were likely to evolve. The process had a direct impact on decisionmaking and helped define for several years the lexicon used across the government for understanding what was occurring in these countries.

In the late 1990s, efforts were made to instill more rigor into the analytic process through the use of diagnostic, alternative analysis techniques such as the Key Assumptions Check, ACH, and Indicators. As the spectrum of techniques used by analysts broadened, we were concerned that the term “Alternative Analysis” was too limiting. In 2005, we hence came up with the term “Structured Analytic Techniques (SATs)” to better encompass the diversity of approaches to systematic and transparent analysis.

The publication of Structured Analytic Techniques for Intelligence Analysis (Heuer and Pherson) in 2011 and Cases in Intelligence Analysis: Structured Analytic Techniques in Action (Beebe and Pherson) in 2012 have laid the foundation for teaching these structured techniques in the United States and internationally and are the most recent milestones of our work. The Heuer/Pherson book has already been translated into Spanish and Chinese underscoring the perceived value of the techniques.

2. K. Brockmann: Foresight and analysis in intelligence work is rather special. What can we learn from it to improve foresight in other ministries and agencies, and for governments as a whole?

Mr. Heuer: I see foresight in intelligence analysis as not very different from foresight in many other fields. Experienced analysts in all fields usually have a well-developed mindset. They may have held this mindset for many years, and it may have been validated by their experience over many years. New information is usually evaluated within the context of this mindset. However, the world is now changing faster and in more different ways than we have ever imagined in the past. Analysts in all the ministries and agencies are facing this same problem. We all need tools to help us view this new world from new perspectives.

Mr. Pherson: Government officials in all ministries and agencies look to analysts to keep them from being surprised. Analysts can best perform this function by infusing creativity into the analytic process through the use of imaginative techniques that engage the right side of the brain such as Structured Brainstorming, What If? Analysis, Outside-In Thinking, and Scenarios Analysis. These SATs help policymakers and decisionmakers better frame a problem as well as anticipate the unanticipated. When matched with Indicators, they can also be used to warn of coming dangers or suggest ways to exploit new opportunities.

3. K. Brockmann: You’ve thought and written extensively on intelligence analytics and especially on the role of cognitive biases of analysts. Which cognitive biases pose the biggest threat specifically to foresight activities?

Mr. Heuer: In general analysts face the challenge to constantly question their analytic mindset and widen their perspective. There are a number of common pitfalls that analysts may face in their

everyday work. Among those are the tendency to favor information that confirms one's preconceptions or hypotheses (*confirmation bias*) or the tendency to come to a conclusion too quickly based on initial and incomplete information (*premature closure*), to name just two examples. We have elaborated on such pitfalls in our previously cited works.

For foresight analysis, however, the problem is not necessarily found among the standard list of individual biases. In today's world, the well-established mindsets that may have been tried and tested over time and been proven accurate may no longer be valid. How can we break away from these and give due recognition to the unparalleled diversity, magnitude, and speed of the changes occurring throughout the world today?

Foresight analysis involves multiple stakeholders, growing interdependence between different policy areas, and a wide spectrum of potential future developments. In this context analysis is no longer a mainly individual but rather a collaborative activity. However, as we know from the work of Irving Janis on Groupthink and many others since his time, group processes are often counterproductive. They often lead to agreement on the lowest common denominator or to irreconcilable conflict. Hence, techniques are needed to structure such processes and avoid these pitfalls in group dynamics.

Mr. Pherson: The events of September 11, 2001 demonstrated the danger of falling into three other traps. When we don't have an appropriate category or "bin" for something (such as using an airliner as a weapon), we are unlikely to factor it into our thinking. We also tend to ignore data that is inconsistent with our lead

hypothesis (we assumed hijackers always want to land the plane and make their demands and missed the significance of FBI reports that some trainees did not seek training on how to land an airplane. Lastly, as the post-mortems vividly demonstrate, we often assume events were more predictable in hindsight than was actually the case.

4. K. Brockmann: What is key to train government foresight practitioners so that they can avoid these pitfalls? What is the most essential content that needs to be taught?

Mr. Heuer: SATs have a significant role to play in foresight analysis. A good starting point might be an agreement among all participants on how the group process should be structured and which techniques are most appropriate to use to address the problem at hand. Many users of SATs have learned from experience that these techniques facilitate the group process by providing transparency and an audit trail for the analysis. Each technique has its own procedure for soliciting, evaluating, and recording alternative views.

A Key Assumptions Check, for example, is becoming a standard procedure. Can we identify key assumptions in our existing mindset that may no longer apply in our rapidly changing world? Similarly, analysts should be taught how to use a simple Cross-impact Matrix to systematically examine the interaction among all relevant variables. Conducting a Premortem Analysis and Structured Self-Critique would also help analysts identify variables that have been overlooked. The techniques make it easier for analysts to work collaboratively in small groups to solicit alternative perspectives and tap a broader range of experiences resulting in a better quality final product.

Mr. Pherson: Our experience has shown that the two most powerful techniques for analyzing future outcomes are Multiple Scenarios Generation (MSG) and Quadrant Crunching™. Both were developed specifically to help analysts manage complexity and uncertainty by adding rigor to foresight analysis. Analysts using MSG first identify a set of key drivers and then arrange the drivers in 2 x 2 matrices to create distinct scenarios or stories of how things will develop based on mutually exclusive criteria. By the end of the process, analysts have a robust set of stories to pick from in deciding which scenarios are most deserving of the policymakers' attention. Quadrant Crunching™ was designed primarily to help practitioners identify unknown unknowns. It uses the same process for generating scenarios but starts from a different place by positing the common wisdom or lead assumptions and then flipping these assumptions to generate contrary dimensions of the problem. Both techniques work off the premise that generating a large number of permutations or stories about how the future may evolve will increase the practitioners' sensitivity to outlier scenarios and reduce the chance of surprise.

5. K. Brockmann: How should the education or training of foresight analysts be organized in a large federal government, such as in Germany?

Mr. Pherson: Foresight training should be organized to suit analysts' different needs depending on their career stage, level of analytic experience, and focus area of their work. In *Critical Thinking for Strategic Intelligence* (2013), my wife and I include a chart showing four types of analysis:

descriptive, explanatory, evaluative, and estimative as defined by the level of conceptualization and time focus of the issue. The kinds of analysis and the types of techniques used increase in complexity and sophistication as one moves up the spectrum.

For new analysts, training should focus on how to array and describe data, for example, by using matrices and link analysis tools. For journeyman analysts, the focus shifts to more diagnostic techniques such as a Key Assumptions Check and Analysis of Competing Hypotheses. Usually the task of conducting foresight or estimative analysis will fall to senior analysts schooled in the effective use of creative brainstorming, scenarios generation, indicators, and indicators validation.

Foresight analysis requires both a talent for conceptualization as well as solid facilitation skills because good scenarios work can only be done in groups that bring diverse experiences, skill sets, and expertise to the table. Ideally, a foresight session should include not only analysts but stakeholders from all government ministries as well as experts (in such fields as technology, IT, area studies, and the environment) that work outside the government.

Training and education in foresight analysis should be treated as distinct from standard analytic training. Different skills and tools are needed. Basic analytic training tends to focus primarily on diagnostic techniques and "left-brain" activities whereas foresight analysis places much more emphasis on creativity, imagination, synthesis, and sensemaking that require use of the right side of the brain. Different sets of skills also are needed to produce a final draft that tells a compelling story and offers actionable insights.

The most effective way to ensure success in promoting better foresight analysis is to establish an analytic tradecraft or foresight cell within a long-range, estimative, or strategic analysis unit in every analytic organization. Such cells are primarily responsible for matching the right technique to the problem, assembling the right set of experts, and leveraging their methodological expertise to generate a robust set of distinct scenarios that support decisionmaking. Foresight cells are most likely to succeed when they are co-located with the analysts that will be leading the research.

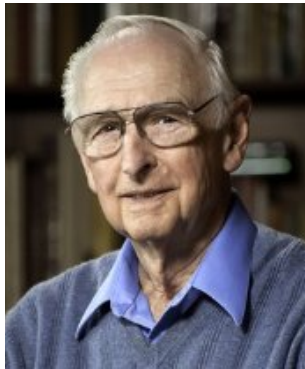
6. K. Brockmann: How would the work environment in a government organization look like that optimally enables, promotes, and rewards bias free analysis and foresight?

Mr. Pherson: The National Intelligence Council (NIC) in the United States, the Office of the Privy Council in Canada, and the UK Cabinet Office all provide good models for producing solid analytic products and foresight analysis. As a former NIO, I am most familiar with the NIC. It is a dedicated unit, comprised of world-class experts drawn from both within and outside the government who work closely with policymakers and assemble teams to produce estimative products, often in response to the policymakers' specific needs. When a National Intelligence Estimate is drafted, the NIO is responsible

for defining the key intelligence question, orchestrating the work of an interagency team of drafters, and overseeing the coordination of the draft. He or she usually does not craft the actual paper. Senior analysts, recruited from the appropriate intelligence agencies, usually draft the estimate. Most analysts consider it career-enhancing to be tapped as the primary drafter of a national estimate.

At times, the NIC has established a small unit of senior analysts as dedicated drafters, and this model can work well, especially if the unit is augmented with a few methodologist practitioners who are skilled in using foresight techniques. A key factor is to separate the drafter(s) of the estimative product from the responsibility to serve simultaneously as substantive analysts responding to daily tasking. Because foresight analysis is unlike any other type of analysis, some initial training should be conducted at the start of a project on what SATs are most appropriate and how best to employ them as part of the analytic process.

Brockmann: Mr. Heuer and Mr. Pherson, thank you very much!

| Richards J. Heuer, Jr.

Richards J. Heuer, Jr. is author of the path breaking book *Psychology of Intelligence Analysis* which is still being used to teach and train intelligence analysts throughout the Intelligence Community and in a growing number of academic programs on intelligence or national security. This book and his more recent book written together with Randolph Pherson, *Structured Analytic Techniques for Intelligence Analysis*, has played a major role in the gradual evolution in how intelligence analysis is done today. Long retired from the Central Intelligence Agency (CIA), Mr. Heuer has continued to be associated with the intelligence and defense communities in various roles for more than 60 years, and he has written extensively on counterintelligence, deception, and personnel security as well as intelligence analysis. Mr. Heuer has an A.B. in philosophy from Williams College and an M.A. in International Relations from the University of Southern California. He has also pursued other graduate studies at the University of California at Berkeley and University of Michigan.

| Randolph H. Pherson

Randolph H. Pherson teaches advanced analytic techniques and critical thinking skills to analysts in the government and private sector. He co-authored *Structured Analytic Techniques for Intelligence Analysis* with Richards J. Heuer, Jr.; *Cases in Intelligence Analysis: Structured Analytic Techniques in Action* with Sarah Miller Beebe; and *Critical Thinking for Strategic Intelligence* with Katherine Hibbs Pherson. He has developed a suite of collaborative web-based analytic tools, TH!NK Suite™ to generate and test hypotheses and validate indicators. In 2000, Mr. Pherson completed a 28-year career in the Intelligence Community, last serving as National Intelligence Officer (NIO) for Latin America. Previously at the CIA, Mr. Pherson managed the production of intelligence analysis on topics ranging from global instability to Latin America, served on the Inspector General's staff, developed and implemented a strategic planning process for the CIA, and was an active proponent of alternative futures analysis. He is the recipient of the Distinguished Intelligence Medal for his service as NIO for Latin America and the Distinguished Career Intelligence Medal. Mr. Pherson received his A.B. from Dartmouth College and an M.A. in International Relations from Yale University.

| About the Government Foresight Project

Acting strategically is one of governments' key tasks. However, planning and implementing future-oriented policy is particularly challenging due to the multitude of stakeholders, the growing interdependence between different policy areas and the wide spectrum of dynamic developments. Examples such as the Arab Spring and the global financial crisis illustrate that decision makers (including their advisors and critical commentators) are often taken by surprise and are not well prepared to deal with such developments. Against this background strategic foresight is gaining importance for government institutions at the federal level. The project **Government Foresight** seeks to develop proposals for enhancing strategic foresight at the federal level of the German state. To that end, structured interviews serve as vehicles to explore ideas of renowned experts as well as approaches and best practices in other countries and organizations and to generate **Impulses** for further developing **Government Foresight** in Germany.

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