Security and safety practitioners responding to evolving threats make decisions every day based on uncertainty, insufficient information, and too few resources for textbook solutions. Unsurprisingly, Chief Security Officers report that critical thinking, decision making, and communications skills are key characteristics for job success. But do we really understand what critical thinking is and how to improve our skillset?

Key Components Of Critical Thinking

Good thinking skills are really not all that complicated, but you need a bit of knowledge and continuing practice to turn the learned skills into instinctive habits. Successful critical thinkers are judged by results that almost always involve deliberation and intuition, logic and creativity. Long-time CIA methodologist Jack Davis recognized this in defining critical thinking as the “adaptation of the processes of scientific inquiry” to your environment and its special circumstances. The key
components of critical thinking include:

- Asking the right questions.
- Identifying your assumptions.
- Reaching out to sources of information beyond those readily available.
- Evaluating data for accuracy, relevance, and completeness.
- Assessing the data and forming hypotheses.
- Evaluating the hypotheses, particularly looking for conflicting data.
- Drawing conclusions.
- Presenting your findings.

Structured Analytic Thinking Techniques

Structured analytic thinking techniques make critical thinking explicit. They externalize internal thought processes to make them clear and transparent enough to be shared, improved, and critiqued. They save time in the long run and add rigor, imagination and accountability by:

- Ensuring your framework is as solid as possible
- Considering differences in opinion
- Providing procedures for qualitative analysis of uncertainties
- Facilitating collaborative teamwork
Structured analytic thinking techniques externalise internal thought processes to make them clear and transparent enough to be shared, improved, and critiqued

You may say that you do not have time to learn, practice, or use specific thinking techniques, particularly when you are facing a pressing decision or crisis, but that is exactly when you need the skills to overcome the cognitive biases that can lead you astray. When the stakes are high that you might be catastrophically wrong, you do not have time NOT to stop and reflect. You need to think in terms of the PREmortem—what might go wrong and how—to avoid the POSTmortem.

5 Key Critical Thinking Skills

We teach that great security decisions are based on five key critical thinking skills that enable you to assess hard security problems, anticipate the unexpected, and avoid disastrous mistakes.

1. **Challenge your key assumptions:** This is a systematic effort to explicitly list and challenge the fundamental presuppositions or mental model that underlies your interpretation of evidence or reasoning. List your working assumptions, then assess whether each is solid (i.e. you would commit resources based on it), requires some caveats (may be true in most instances but not in all), or is unsupported (your “key uncertainties”). You refine the list as you learn more or circumstances change and consider whether your key uncertainties should be converted into collection requirements or research topics.
2. **Consider alternative explanations:** Our brains are amazing organs that can “make sense” of situations based on few pieces of information, but not considering missing data and potential alternatives can lead us down a wrong path from which our natural biases will prevent us from recovering. Our mindsets become entrenched and we only see the situation in one way. You can easily develop alternative explanations by:

- Stating your lead hypothesis (or educated guess) and brainstorming alternatives that span the full range of possibilities from most negative to most positive.

- Breaking your lead hypothesis into its key components, following a framing structure like the journalist’s “Who,” “What,” “How,” “When,” “Where,” and “Why” to evaluate all critical dimensions, and develop alternative combinations for consideration.

- Creating a null hypothesis by establishing in your mind the opposite of your lead hypothesis: something IS or it IS NOT (i.e. guilty or not guilty). The NOT hypothesis becomes a bin for what appears to be anomalous data that may later prove far more diagnostic.

Critical thinking skills enable you to make better decisions and collaborate more efficiently.

3. **Look for inconsistent data:** This is the crux of the scientific method; you do not have to be a
scientist performing a controlled experiment to use it. Your brain will naturally try to fit disparate pieces of data into a story or lead hypothesis, but if you have more than one hypothesis you can assess the data against each possibility to see which data is disconfirming and how significant it is in challenging the common wisdom. This can save you a lot of time in sorting through complex possibilities and multiple pieces of data; if you encounter a piece of data that is compellingly inconsistent with one of the hypotheses—for instance, a solid alibi—you can quickly discard that possibility and direct your attention to more likely solutions.

4. Identify key drivers: Characterizing the driving forces at play in a situation can help you anticipate the future and reduce the chances you will be taken completely by surprise. Varying the weights of these key drivers can generate credible alternative scenarios that capture the range of possible outcomes. You can track which scenario is developing through indicators that meet five criteria: Observable and Collectible, Valid, Reliable, Stable, and Unique. Uniqueness is difficult to meet, but should be a goal.

5. Understand the context: Learning to stop and reflect on the overarching context is the fifth skill, but arguably perhaps the most critical. You are better off learning how to “think above your pay grade” at the start by putting yourself in the shoes of your managers, colleagues, and clients. Ask yourself: “What do they need from me?” “How can I help frame the issue?” and “Do I need to place their questions in a broader context?” Simple framing techniques help get and keep you and your colleagues in sync; it helps ensure that coordination is as easy as possible and avoids having to reconceptualize projects when they are well underway.

These critical thinking techniques help you deal with the full range of security problems—from cyber and insider threats to protecting sensitive facilities. You can make better decisions, collaborate more efficiently, and be prepared for the worst if you frame projects, avoid analytic traps, stimulate creative alternatives, and make compelling arguments for countermeasure enhancements.
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