What Do You Think About Thinking?

WHAT DO YOU THINK ABOUT THINKING?

BY JOHN ROSS
Understanding, seeing the obvious, and making sense of the world comes naturally. Well, that’s what we all intuitively believe. However, the truth is something different. To understand a topic or issue we need strong thinking skills and a good attitude towards that thinking. We have to challenge assumptions that perpetuate poor quality thinking. We need critical and analytic thinking skills.

Critical or analytic thinking is a process that offers us a way to challenge ourselves and become better analysts. Sometimes a seemingly mundane thought exercise will help make this clearer and give us a bit more insight into how we each think about thinking. Consider the mundane question, “What color is the Sun?” Got an answer? Good. We’ll return to this question a bit further on.

The phrase ‘critical thinking’ has been around for some time and has arguably become plastic. A clear and universally agreed upon definition is almost impossible to come by. Generally, the definitions all orbit around a concept that is described by words such as, reason, analysis, rational, evidence, and so on. The goal is to adopt conclusions that are arrived at through logic and evidence.

When teaching this topic to intelligence analysts, police investigators, immigration and border personnel, policy experts, and military personnel, I present critical thinking as analytic thinking because I find it has less meaning packed into it. I have encountered people who treat critical thinking as an excuse to be hostile towards the beliefs of others, and that’s not what this is about. Since most of us are analysts, why not call it analytic thinking? There are some good philosophical arguments about analytic thinking, but that’s a different article.

Analytic thinking relies heavily on interpretive skills. These skills help an analyst understand taskings, evidence, context, and client needs, in order to determine what is relevant and to set up reasoning for success. Verification skills are also relied upon to reduce the influence of bias, deception, source credibility, and reliability and to fact-check any claims or assumptions used in the analytic reasoning process. Having good verification skills and using them are part of a good thinking disposition that promotes good interpretive skills.

Finally, I believe that the third ingredient in analytic thinking is reasoning skills. These allow the analyst to arrive at and present descriptions, explanations, interpretations, and estimations coherently while helping the analyst assess the same.

While reasoning skills get the most press and the most attention, I have found that they are often taught as variations of informal logic. Having studied philosophy myself for several years, one three hour course on informal logic, to help an analyst become a better critical thinker, is asking a lot from those three hours. Many critical thinking courses an analyst will come across through universities are informal logic courses. While I do highly recommend full academic courses in informal logic, no matter what critical/analytic thinking, learning, or professional development an analyst might undertake in their career, there is something critical that must be present to help these enhanced thinking skills to take hold: a healthy thinking disposition.

A thinking disposition, in its simplest form, is how you think about thinking. More precisely, it is your motivation, your tendency, your ability and drive to put the necessary effort into thinking the best way you can. Before we assume that this comes naturally to everyone, consider briefly that most of us have encountered closed-minded people and intuitively feel that a closed-minded tendency shapes that person’s motivation to seek information that only conforms to their existing beliefs, opinions, and arguments. In short, we have a good idea already of what a poor thinking disposition might look like. We have also seen organizational cultures that look like this.

No matter how motivated you are to think well, motivation won’t carry the day on its own. Deanna Kuhn said of critical thinking, “it is also an attitude or disposition to recognize when a skill is needed and the willingness to apply it (Kuhn 1999).” This willingness to apply good thinking skills arguably forms the essence of the analyst’s work ethic.

In 2013, the United States Air Force Research Laboratory, Human Effectiveness Directorate conducted a meta study that reviewed over 300 documents related to thinking dispositions and concluded that screening prospective employees for their thinking disposition and providing training to current and future employees may benefit organizations that do so (Marsh 2013).
He correctly recognized how the standards and methods for sound reasoning varied across disciplines and that no specific academic discipline should hold a monopoly over the right opportunities to become a critical thinker. The introduction of structured analytic techniques as a way of organizing and articulating an analyst’s thinking about intelligence problems provided part of the solution. That said, it still remains that “teaching critical thinking skills is of little value if analysts are not inclined to use them (Moore 2007).”

Not only is it important that individual analysts possess a good thinking disposition and effectively use their thinking skills, but also it’s important that organizations encourage and nurture cultures that value good thinking dispositions.

In terms of getting one’s bang for the buck from professional development and training, I believe that development of interpretative skills may benefit an analyst and their organization. My view is largely influenced by the consideration of time, effort, and knowledge required to gain advanced reasoning skills compared to the amount of time required to develop and maintain those interpretive skills. Don’t get me wrong, both are critical and need to be invested in, but if you have limited resources, funds, and time for development, I have seen more gained in shorter time by teaching interpretive skills over reasoning skills.

At the onset of this article, I asked the question “What color is the Sun?” In every class I have taught on analytic thinking, the students, all intelligent people, have provided a wide range of answers from saying it’s yellow to red and to orange, and very rarely does someone offer that it is white. The Sun is classified as a G2V yellow dwarf, but its color is actually white. The Sun is something we all experience on a regular basis.

Marsh noted that research conducted in the 1950s showed that college students who got low scores on aptitude tests were okay with having gaps in their knowledge and were indifferent to having full and accurate understandings of the topic at hand. The high scorers held opposite dispositions towards knowledge and understanding. Later studies found that most people were not disposed to think about other sides of arguments or examine their own positions and so may be disposed to poor thinking habits (Ibid).

The thinking disposition that an analyst has, can also be thought of as a type of intellectual trip-wire that triggers analytic thinking. Marsh found in her meta-study for the US Air Force that a healthy thinking disposition influences an intelligence analyst to:

- Engage cognitively
- Override personal beliefs and biases
- Take an open-minded approach
- Find the relevant information to understand the situation
- Explore all sides of an issue
- Avoid prematurely ending critical thought
- Only advance conclusions once there is enough to support the conclusion

While reading that meta study, I was reminded of a SCIP networking experience that took place probably 10 years ago. I had the pleasure of meeting David Moore at a SCIP conference and we discussed this topic. He was very aware of the importance of thinking dispositions to the effectiveness of intelligence analysis. David Moore intelligently argued that thinking disposition and critical thinking skills are both necessary for an analyst to be effective.

In the second edition of his seminal occasional paper “Critical Thinking and Intelligence Analysis,” he wrote:

Ideally, valuable skills and dispositions should be developed among prospective analysts before they join intelligence-producing corporations. Yet, observations by the author of newly hired intelligence analysts suggest this happens rarely, if at all. This raises two questions, “What are the opportunities for prospective analysts to become critical thinkers before they are hired?” and often “Why do these opportunities not exist?”
Most people see it on a daily basis. For those living in England, you’ll have to trust that there is actually a Sun. Even though we have a lot of exposure to it, that passing familiarity does not necessarily translate into a good understanding of it.

The reason I ask this question of the intelligence analysts in my classes has nothing to do with assessing their scientific knowledge. The purpose of the question is to assess their ability to interpret. On one hand, I want to see how they interpret questions they are given and on the other I want to add insight into how they interpret evidence. Taken together, I try to get some insight into the thinking dispositions of the analysts sitting in front of me so that I can tailor the delivery of the course to better meet the students’ needs.

Fewer students than I have fingers on my one hand have stopped me upon receiving the question to ask for greater clarification. Answering a question about the color of the Sun seems straightforward enough, but only if you load the question with assumptions. When you answered the question yourself, what assumptions did you rely on to arrive at your answer? To minimize the potentially misleading influence of assumptions requires one to have a commitment to find the right information to understand the situation at hand as opposed to being comfortable with information gaps that could be closed with a little more effort.

This question often gets loaded with assumptions such as the time of day, location of observer, wavelength of light, and location of the Sun. I am willing to accept answers that reference a painting? Do I want an answer from a specific time of day, such as sunset or sunrise, or perhaps as seen by astronauts or x-ray telescopes?

The thinking disposition that drives an analyst to interpret the question before providing an answer shapes the types of evidence that will be collected and considered. It will shape what is considered relevant, and influence what perspectives need to be considered in order to get all relevant sides of the topic covered. The role of interpretation is central to good analytic thinking.

I would argue that there are five abilities necessary to act on the thinking disposition to interpret tasks, questions, evidence etc.:

- Ability to identify relevant and essential information, evidence, and arguments
- Ability to compare and contrast a range of perspectives on the issue
- Ability to comprehend the evidence, arguments, and information
- Ability to seek clarification where understanding is not clear
- Ability to communicate reasons for conclusions

These abilities are interpretative skills that help increase the likelihood of providing a client with an analytic product that is accurate to the evidence available.

Central to interpretation is the ability to have good definitions. I always make sure to tell students that no matter what you forget from the course, do not forget this point. I believe that seeking clarity through definition will help address many ‘down-stream’ problems that analysis can suffer from.

To put this in the context of the question, “What color is the Sun?”, a good thinking disposition would compel an analyst to ask for greater precision in the question by asking me to define what I mean by color, Sun, context, and the reason why I am asking the question in the first place. In short, unless I go through this precising exercise, I do not possess the appropriate definitions necessary to put analytic thinking to use in the best way possible.

There are four basic types of definition that help to improve interpretation and understanding. A reportive definition, like those found in dictionaries, is based on how people use a word. The word, sick, may mean ill, or it may mean awesome, in the vernacular. An ostensive definition points at the object being referred to by the word. Parents who hold up a pear to a baby and say pear, as a way of teaching that baby what a pear is, are providing an ostensive definition.

The thinking disposition that drives an analyst to interpret the question before providing an answer shapes the types of evidence that will be collected and considered. It will shape what is considered relevant, and influence what perspectives need to be considered in order to get all relevant sides of the topic covered. The role of interpretation is central to good analytic thinking.

A stipulative definition is an agreed meaning of a
word; how many times have you heard, or said yourself, ‘for argument’s sake, let’s agree that...?’ This process of consensus produces stipulative definitions. The use of stipulative definitions is everywhere in corporations and organizations. Just think of the shorthand phrases and acronyms you use to describe activities within your company.

Defining terms, contexts, and concepts can provide greater clarity of meaning and establish a shared interpretation of the topic. This is critical to analytic thinking and effective communication.

Ambiguity that leaves your client with more than one possible meaning introduces the risk of multiple interpretations. “Jennifer does not like Stephanie, even though she likes Ted,” is ambiguous and open to multiple interpretations. Having poor definitions undermines good analytic thinking. Possessing a good disposition can help keep your analytic thinking clear and free from ambiguity.

Underlying my desire to emphasize a need for better interpretive skills and the centrality of thinking dispositions to intelligence analysis, is an awareness of a likely future that we will have to adapt to. Many of you have already seen the beginning and may even use early versions of synthetic intelligence and proto-artificial intelligence. These technologies and the associated process and organizational changes that will accompany them will likely transform analytic tradecraft.

The current iteration of information technology is transforming the role of analysts who can find information and get answers. Some C-suite executives can now do that themselves. As synthetic and artificial intelligence evolves, the analytic capabilities that non-intelligence analysts will have access to will grow. The analyst who cannot adapt and evolve may become marginalized or irrelevant.

Nick Hare and Peter Coghill argue that the role of the analyst will shift away from producing analysis to directing intelligence systems that perform cognitive tasks to find and analyse information. (Hare and Coghill 2016). They argue that analysts’ job functions will become something akin to the function of fighter pilot managing the capabilities of the 5th or 6th generation jet she is flying (6th generation fighters are expected within 10 years).

In this scenario of the future, human analysts may see themselves managing complexity more and more. Complexity, by its very nature, requires good interpretive skills and abilities. Hare and Coghill estimate that the future analyst will need to “mediate between the customer and the information: to assist the customer in defining there scenarios of interest, to help design analytical products that best suit the requirement and decision time-frame of the customer, and perhaps most importantly, to be expert in the use of analytical tools that can be set to work to help test hypotheses of interest and forecast decision-relevant outcomes (Ibid).”

The ability of analysts to think well and be possessed by good thinking dispositions will continue to be important into the future. As cognitive-capable systems adopt a greater role in processing information and performing analysis, analysts will need to have strong interpretive, cognitive, imaginative, and thinking skills to effectively use the intelligence capabilities that will be at his/her disposal. The company that recognizes and nurtures this will surely have a competitive advantage.
ABOUT THE AUTHOR:
John Ross is a strategic analyst. He developed and taught a well-received critical and analytic thinking course for intelligence analysts, police and others who require superior analytic skills. He is an avid racer, whose main sport is kart but is looking forward to his first laps in a Formula 2000 car this year. When not wearing a crash helmet he can be found looking skyward as a member of the Royal Astronomical Society of Canada.

REFERENCES:
Hare, Nick. and Coghill, Peter. The Future of the Intelligence Analysis Task in Intelligence and National Security. 2016


Marsh, Melinda. Advanced Analytic Cognition: Thinking Dispositions for Air Force Research Laboratory, 711th Human Performance Wing, Human Effectiveness Directorate, Wright-Patterson AFB. 2013
