

# Ignoring Logical Reasoning is Logical

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The radio engineer has a gut feeling that the intermittent noise arose from a corroded splice where the coaxial cable first went underground. The program director has the intuition that reducing the number of spots would actually increase the station's revenue. The engineering manager has the hunch that an intern would make a great technician once trained. These assertions, by well-trained individuals, are not based on the kind of formal logic and reasoning that we all value in professional, technical and scientific activities.

To be socially acceptable, logical reasoning is often used to rationalize and justify a conclusion that simply appeared spontaneously. Or, when being honest, we add such qualifiers as hunch, intuition, gut-feel, or best-guess, to signal that we cannot defend the assertion, even though it has a high probability of being correct.

Recent research has shown that in many situations logical reasoning is actually counter-productive. Spending too much time debating the pros and cons of a decision actually reduces the likelihood of making a wise decision, as represented by the cliché, "analysis paralysis". Ignoring logical reasoning can, in fact, be logical. Scientists now explain this apparent paradox with the discovery that we have two independent and perhaps unrelated thinking systems: explicit logic (conscious) and intuitive hunches (unconscious).

Consciousness is like the display of the dashboard in an automobile, providing only limited data about the state of the engine. Of the thousands of neurological substrates in our brain, most have no connection to consciousness awareness, but they make valuable contributions to our ability to handle complex situations with massive quantities of data. We are simply not aware of how the brain sorts possibilities, which is called deliberation-without-attention. We say of a complex problem, "I will sleep on it," which means that we are providing time for unconscious deliberations to process the mess. At 3 AM, the answer just pops out—in the flash of lightning that wakes us up.

Thinking without awareness produces results when there are more than a few factors to consider. Logical reasoning works best with only a small amount of reliable data. It takes the form of "if A, then B, if C then D, if A and B then D", and so on. But when faced with perhaps hundreds of unreliable data fragments, unconscious thinking can harness a lifetime of buried experiences, quickly seeing patterns that are consistent with the data, while readily ignoring noise and missing information.

Troubleshooting an unexplained defect in a large system is a typical example of massive data without a readily apparent explanation. In such cases, an engineer would be wise to quickly intuit multiple explanations and then to test them logically by running experiments. Theories, explanations, and hypotheses are not created rationally even

though they can be tested with formal logic. Because these two abilities are unrelated, some people are better at generating theories than at testing them, and vice versa. They are different skills that use different types of mental activities. A team composed of individuals with different skills is ideal.

Malcolm Gladwell, in his best-selling and easy to read book, *Blink*, provides a collection of simple case studies to illustrate the power, and *danger*, of using intuitive thinking. He also collected numerous scientific studies to explain how intuition has evolved to be a major contributor to our survival as a species. Furthermore, he observes that we broadcast our emotional attitudes even if we are unconscious of how we are feeling. Gladwell calls quick responses “thin slicing.” When you hear the screeching tires of a fast approaching truck, you react without thinking through your logical options, and simply jump out of the way. Logic is too slow and too vulnerable to confounding noise, such as an unrelated horn and a ringing cell phone.

Timothy Wilson summarized this mental duality. “The mind operates most efficiently by relegating a good deal of high-level, sophisticated thinking to the unconscious, just as a modern jetliner is able to fly on autopilot with little or no input from the human ‘conscious’ pilot. The adaptive unconscious does an excellent job of sizing up the world, warning people of danger, setting goals, and initiating action in a sophisticated and efficient manner.”

We are most productive when the two modes of thinking work together. Unfortunately, engineers and scientists are subtly taught to distrust intuition, and artists are taught to avoid logic: two polar extremes. While some individuals have a natural gift for combining the two modes, most of us learn the skill with great effort. In fact the best art and technology often results when the two modes are fused into a holistic unity.

Consider a meeting called by the engineering manager to address a technical problem. Using the rules of brain-storming, the group can be initially encouraged to free-associate, articulating apparently unrelated ideas. Then the mode switches to analyzing the choices and the implications. The mode can be switched back to articulating wild ideas full of fantasy. Intuition is the engine, and logic is the filter. In this way, both types of thinking are harnessed and fused into a single optimum strategy.

In fact, my Last Word column embodies this same duality. I let my mind wander to random ideas, patterns, and fantasies in order to find topics. I then filter them using my logical mind. While writing, I again let my intuitive mind take control in order to discover analogies and examples. And finally, I apply my knowledge of good writing to create a structured, linear article, followed by extensive editing. It was with great effort that I learned the oldest wisdom about writing: just write anything and then edit and filter. In writing my first book, some 300,000 words ended in the trashcan. Learning to be comfortable with dumb ideas, which should then be easily discarded, is the key to creative productivity.

Some of the debates that are currently raging in radio publications, such as multicasting and HD radio, are perfect candidates for dual thinking. These topics are too complex to evaluate solely on logic. On the one hand, the danger of intuitive thinking is that personal biases and hidden agendas strongly influence the results. On the other hand, these questions are simply too complex to produce a clean, neat conclusion. I strongly recommend combining the two approaches rather than treating them as incompatible binary choices.