

What Does it Mean to Be Multilingual?

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Having discussed the formalism of decision making in the last two Last Word articles [June 11 and Aug. 20], I would like to expand the discussion still further. Conventional wisdom would have us believe that engineers do not make good managers and decision makers. Is this viewpoint valid or an unfair bias? Before attempting to answer this question, I will examine how irrationality, skewed psychology and language difficulties influence or even dominate the process of decision making. At the end of the article, you can then answer the question for yourself.

As engineers, we are trained to believe in rationality and causality. Moreover, those of us who have a personality with a bias toward thinking of reality as being concrete and tangible are more likely to have become engineers rather than psychologists. Engineers tend to say that something is either true or false, which is a clean polarization in a binary rational world. Engineers are not unique in their love for rational clarity. Classical econometrics also assumes that all behavior can be explained by rational and predictable self-interest. Their conclusions are often wrong because they assume that there is a rational basis for decisions.

In contrast, a lawyer believes there is no truth, only varying degrees of possible truths emanating from the available evidence; hence, we have juries to make a best guess about truth. The legal system has at least three definitions of truth and none of them relate to an engineering definition of there being a knowable reality.

Similarly, psychologists accept that there can be multiple simultaneous truths that can be inconsistent with each other. Cognitive psychologists have recently demonstrated that different brain substrates each have their own reality. These substrates talk to each other through neural networks that are limited. Neurological activities controlling our behavior are usually not present in consciousness (analogous to the dashboard of an automobile, which only reveals a few details about the state of the engine).

Previously I described decision making as an algorithm with sequential steps. This approach has the invalid hidden assumption that people are similar to engineering systems: rational and predictable. What happens to our nice clean model of decision making when we introduce emotion, narcissism, greed and psychological distortions. In the engineering world these factors would be the equivalent of impulse noise, temporal instability, scrambled interrupt stacks that do not recover and a collection of unpredictable inputs from unknown sources? This alternative view of human behavior is not a critique, but rather a commentary on how our brain evolved over millions of years. A good decision maker incorporates this messy reality rather than starting with silly assumptions. I remember a story that I heard at MIT about a biologist who explained the basis of milk production using a model of a spherical cow with one input and one output.

While the model produced clear conclusion, they had no utility because the model's assumptions were inconsistent with real cows.

Another major problem with data collection is that we use language to get information from colleagues. Language may be the best form of communicating for humans but it is still highly flawed. For example, when writing my book on aural architecture I remember being surprised by the ill-defined meaning of the simple word "acoustics," from the Greek word *akoustikos*, meaning that which pertains to hearing. That same word now also means any form of vibration in solids, liquids and gases without necessarily being audible. On the other hand, in the context of the phrase an *acoustic guitar*, the adjective "acoustic" means without electronics. Acoustics can refer to the way in which a concert hall changes the experience of music. In fact, there is no clear definition of the word. Sometimes acoustics is used to mean any sonic process.

As a general rule, language skews communications. And to compensate for this fact, I try to build a unique dictionary for each person with whom I am communicating. At the extreme, think of a group of people where one individual speaks French and others speak German, Russian, Greek, Swahili, Dutch, Portuguese, and so on, without anyone serving the function of a multilingual translator.

Linguists know that language is overflowing with ambiguities and ill-defined concepts. Try the experiment of having your colleagues write down a definition of "trust," "ethics," or "responsible." Definitions span a wide range. Even such words as "sophisticated" and "manipulation" have complex and contradictory meanings. Sophisticated means both worldly wise and educated, but it also means surface knowledge without depth, as in sophomoric. Manipulation only means to influence a situation in order to change the outcome, but it may also carry the *optional* meaning of using power for personal rewards perhaps to the detriment of the target person.

If you have a recreational interest in language, I strongly recommend the book, *The Unfolding of Language: An Evolutionary Tour of Mankind's Greatest Invention*, by Guy Deutscher. Among other insights, he describes that a word begins as a reference to a single concrete object, and then over a period of time, the word becomes generalized and more abstract. An abstraction becomes notoriously ambiguous and dependent on context. I am sure that all of us have had the experience of saying something very clearly and only later discovering that there were ambiguities that resulted in a completely different message being received.

One of my clients recently got into trouble on the design of a new power supply. Marketing, sales, engineering, and customer support all agreed that the new supply should be equivalent to the old one. But nobody realized that the word "equivalent" meant something different to each discipline. Rather than recognizing the flaws in language, for which we are all responsible, there were arguments about which group was incompetent. When everyone realized that linguistic ambiguity was the basis for the disagreement, the discussion shifted from personal hostility to clarifying examples.

Everyone owned the problem of language, which is like the 3rd law of thermodynamics, you cannot win, you cannot break even, and you cannot get out of the game.

In some sense, each of us has a private and unique language based on our particular personality and psychology. The vast richness of human diversity was nature's way of creating a robust gene pool to insure survival of the species. Evolution values differences among people.

The idea that each of us has a unique language leads us to the uniqueness of each individual's personality and psychology. For example, one of my colleagues is extremely creative because he can consistently think "outside of the box" but this ability arises from an associative mind that jumps randomly from image to image without any sequential logic. His unique skill comes with corresponding inability to put ideas into language, which is intrinsically linear. The rest of us are faced with the choice of either ignoring his engineering brilliance or compensating for his lack of language skills. Another colleague, who possessed vast marketing experience and wisdom accumulated over 20 years, could only communicate by responding to questions. His psychology was entirely re-active, not pro-active. Without adequate questions, critical information remained unavailable.

Did you ever hear someone say that he *feels* that a decision is wrong but could not explain his intuition in a logical fashion? Should one respect a conclusion that does not fit a rational linear model of language? In his book, *Blink*, Malcolm Gladwell explains the power of intuition, which exists entirely independently of logical thinking. On one hand, intuition can reveal the essential truth buried in a deep fog; but on the other hand, intuition can be misleading or simply wrong. It is not easy to know which is which.

And finally, many of us are actually engaging in an internal dialog with imaginary managers, parents, siblings, and friends while we are participating in a professional context with colleagues. Both conversations exist at the same time and they can fuse with each other without being aware of that duality. Such internal dialogs with imaginary people exist without our necessarily being aware of this fact. One can compensate for this by recognizing that there is an inner world that only partially aligns with the external world.

Do these "extraneous factors" invalidate my early model of decision making? The answer is no if the decision maker expands his model to include this additional texture. Working at so many levels simultaneously (rational, irrational, fantasy, linguistic, and cognitive) is an art form that can only be acquired from experience. To become proficient one must accept that life is messier than a simple model of people as being like elements in an engineering system.

Acquiring the skills of being multilingual dramatically enhances one's utility to the organization, the family, and career. If you can become multilingual, you can become a good decision maker and great manager; if you are monolingual, stay as an engineer making technical contributions to well defined problems.

How did I acquire these skills? It was not from classroom teachers, trade journals, or academic books. Rather, these insights arose from what I call “hyper-listening,” which includes the humility to abandon the preconceived belief that facts dominate the decision making process.