



Accelerating Success

What's the Big Idea?

How Would Freud Improve on Business Intelligence?

by Kelly T. Slaughter

Without considering how the brain is wired to view the data as presented, BI is no longer business intelligence but simply business information. Poorly designed BI may even become counter-productive in an organization.

As the legend is told, a king, delighted by the newly invented game of chess, offered the game's inventor a single wish. The inventor simply asked for wheat. When asked how much, the inventor requested that the king place a single grain on the first square of the chess board, two on the second square, and continue to double the number each time to the final square. The king agreed and sent his minister of agriculture to the storehouses for the inventor's fee.

You may have already realized that the king's decision bankrupted his kingdom. If not, understand that the growth in grain was exponential. The first square on the chess board had a single grain. The 11th square would allow the inventor to eat for a week. By the 28th square, the entire city populace would need to turn their bread over to the inventor. By square 49, the king would need to conquer all of civilization to acquire the promised food. And there are still 15 squares to go!

The king's decision-making flaws reflect cognitive biases that we all share. In this case, the small initial numbers and the inclination to think linearly rather than exponentially adversely biased the king's reasoning. A contemporary example of cognitive biases can be found in the research of Wharton professor Gavin Cassar, who revealed that financial presentations are used to reinforce existing tendencies rather than reexamine them.

Potential for cognitive biases should be considered by those pursuing Business Intelligence (BI) initiatives. Greater access to real time data, more numerous dimensions available to view the data, and more elegant formats to display the data often don't overcome these biases or lead to improved decision making. Remember the old axiom that a poorly designed IT system will simply allow the same mistakes to be made much more quickly. Similarly, a BI solution that does not consider inherent biases of the mind may serve to inflate confidence while doing little to improve the actual decisions being made.

How might the BI develop address cognitive biases? The typical BI developer may have excellent technical skills and business acumen but a limited exposure to cognition; he or she probably has little or no formal training in cognitive bias and perception. It is important to be aware of the potential for these biases, and seek help to appropriately model the decision making context (certainly easier than studying psychology to develop IT systems).

Consider the bias of “framing,” where a change in the presentation of a problem changes the user choices--even though the underlying problem is the same. If a BI pricing system shows a 99% match between expected and invoice prices, a manager may sleep well at night. If the BI system instead displays that this 1% mismatch between expected and invoiced prices is resulting in \$5 million worth of invoices being held for reconciliation and correction, the manager may not sleep at all.

These biases are deeply rooted into the mind. Consider the Ames room, where two people of equal height are perceived as having different heights due to distortions in the scale of the room (see a few examples at the following link - <http://images.google.com/images?hl=en&q=ames+room&gbv=2>). Even the awareness that the mind will be “tricked” before viewing the optical illusion will not allow the viewers to reprogram their perception. Our biases are not limited to our perception of the physical world, but include interpretations of trends, events, and recall. For instance, a running back whose fumble costs his team a game may carry a reputation for fumbling even when on average he is more dependable than other running backs.

These are just a couple of examples from a number of domains, including behavioral economics, cognitive science, and psychology, in which issues of the mind are studied. Our collective challenge is to translate these abstract research findings into the BI context and more rigorously account for the presentation of the information. Without considering how the mind is biased to view the presented data, BI is no longer business intelligence but simply business information.

When developing BI solutions, the technology is the “easy part” for many organizations and IT providers. However, organizations are really trying to modify the decision-making behaviors of BI users. Realizing that the mind is another element to consider in the design of BI solutions may be the difference between “another technical tool” and true performance improvement for the enterprise.

About the Author: Kelly T. Slaughter is a Manager with Avalion Consulting in Dallas, Texas and can be e-mailed at kslaughter@avalion.com. He received his BBA from The University of Texas at Austin, MBA from the University of Chicago, and is (hopefully) a few months away from finishing his dissertation for the University of Minnesota’s Information and Decision Sciences program.