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The Elephant in the Room: Using Brain Science to Enhance Working Relationships

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Abstract

Fusing data generated by current research in social neuroscience, positive psychology, and advanced imaging techniques, the brain science knowledge that results gives us new tools for understanding and enhancing the ability of men and women to work together. Taken together, this information is becoming known as gender intelligence and is being adopted by many progressive organizations. Companies like Deloitte & Touche, IBM, and PriceWaterHouse Coopers have seen immediate financial results including increased retention of women by training their managers to use gender intelligence in the workplace. Using the principles of brain science particularly with respect to gender differences can have a positive impact on corporate culture and organizational success.

Author Bios

Diana Larsen consults with leaders and teams to create work processes where innovation, inspiration, and imagination flourish. With more than fifteen years of experience working with technical professionals, Diana brings focus to the human side of organizations, teams and projects. She activates and strengthens her clients' proficiency in shaping an environment for productive teams and thriving in times of change. Diana discovers solutions and possibilities where others find only barriers and obstacles. Diana can be reached at dlarsen@futureworksconsulting.com.

Diana co-authored *Agile Retrospectives: Making Good Teams Great!*. Current chair of the Agile Alliance Board of Directors, she co-founded the "Agile Open Northwest" conference and the international "Retrospective Facilitators Gathering". She is a frequent presenter both nationally and internationally on Agile team development topics.

Sharon Buckmaster, Ph.D. coaches and consults with organization leaders wanting to create workplaces that are economically, ethically, and socially sustainable. She has developed a clear perspective on organizational change that builds on individual and organization strengths to meet current challenges. Sharon sees the art of leadership as a creative endeavor shaped by context and character.

Sharon excels at working with leaders. Her long-standing interest in leadership for women led her to found the Women's Center for Applied Leadership and her dissertation research called *Standing Up and Standing Proud: Senior Executive Women Who Advocate for Gender-Equity* (available at www.futureworksconsulting.com). She is an associate of the Center for Gender in Organizations at Simmons College and currently teaches in the Master's program for Applied Information Management at the University of Oregon. She can be reached at sbuckmaster@futureworksconsulting.com.

What's All the Fuss About Anyway?

It seems that everywhere we look these days, there are articles describing the implications of new research findings about the brain. From the pages of the N.Y. Times to Harvard Business Review to Fast Company, scientists are providing us with tantalizing new information that challenges much of what we thought we knew about what makes us tick and why we interact with others the ways we do. A few years ago, Dr. Eric Kandel, the 2000 Nobel Prize winner for biochemistry said in a speech that this research is clearly the new frontier in medicine and science, likely to vastly alter and also improve our understanding of individuals and society. We focus here on three of those research streams most relevant to people as members of organizational systems: social neuroscience, positive psychology, and imaging technology.

Briefly, we can describe these three areas in the following way:

Social neuroscience is the study of what happens in the brain when people interact. Daniel Goleman, perhaps best-known for his work on emotional intelligence, has developed an idea he calls “social intelligence “. Whereas emotional intelligence is primarily an intrapersonal process, social intelligence is an interpersonal one. According to Goleman, people are “wired to connect” with the result that we are inexorably drawn into an intimate brain-to-brain linkup whenever we engage with another person. That neural bridge lets us affect the brain—and therefore the body—of everyone we interact with, just as they do us. This neurological dance stimulates our nervous systems, affecting hormones, heart rate, circulation, breathing and the immune system. Goleman describes the relevant neural pathways, including the thalamus and amygdala, which together regulate sensory and arousal stimuli. He speaks of spindle cells, which rapidly process social decisions; of mirror neurons, which sense another’s movements; of dopamine neurons, which react to pleasure-inducing neurotransmitters that flow freely while two lovers gaze.

Positive psychology is a new branch of psychology focused on the study of well-being and the enrichment of human life. Researchers such as Dr. Jonathan Haidt at the University of Virginia have been studying the chemical and hormonal responses generated by witnessing acts of moral courage and inspired behavior. Dr. Barbara Fredrickson at the University of North Carolina has discovered that experiencing positive emotions in a 3-to-1 ratio with negative ones leads people to a tipping point beyond which they naturally become more resilient to adversity and can achieve what they once could only imagine.

Imaging technology is the world of functional MRI’s (fMRI), positron-emission tomography (PET) scans, SPECT scans, and other non-invasive brain-imaging technology that allows us to see inside the human brain in real time while it is solving a problem, experiencing emotion, or establishing trust with another person. Differences between men and women have been clearly documented in structural, chemical/hormonal, and functional areas. Researchers such as Daniel Amen, Michael Gurian and Barbara Amis have developed ideas commonly called “gender intelligence” to describe the likely impact of these differences on behavior.

Why Does “Gender Intelligence” Matter in Organizations?

Women have succeeded now at every organizational level and currently occupy just over 50% of the management and professional/tech roles according to 2007 data from Catalyst, a leading research and advocacy group for women in the workplace. Despite that progress, at current rates it will take more than 47 years for women to achieve parity in executive level, also called “C suite”, jobs. Clearly, the idea touted in the 1970s that simply having talented women “in the pipeline” would lead to gender equity, has proved inadequate. Numerous studies such as Harvard Business Review’s recent *The Athena Factor*, report that many women leave organization life because of hostile work environments and extreme job pressures. Ineffective communications, influenced in part by gender differences, can contribute to perceptions of discomfort that result in a decision to leave the organization. As retention rates fall, recruitment and retraining costs rise. After training its managers in brain-based gender differences, Deloitte & Touche saw such immediate improvement in retention rates that the company estimated it saved \$250 million dollars.

In addition, numerous academic and industry studies have documented high exit rates for women from the IT arena contributing to difficulties in filling roughly 500,000 information technology jobs nationally. Contrary to popular belief, there is now an ample supply of women graduating universities with degrees in the science, technology, and engineering (SET) fields. With more than 50% of the current US SET workforce approaching retirement age, organizations must examine strategies to address the workplace conditions that attract capable women and men, and increase the likelihood of their continued employment. Gender intelligence is one key tool that we can utilize.

So, how are our brains different?

There are three areas where significant differences exist between male and female brains. These are in actual structures of the brain, in the amount of neural blood flow, and in brain chemistry. Here are some of the key findings about the ways in which men and women’s brains differ:

- IQ tests of general intelligence show no overall difference...the difference shows up in different kinds of intelligence.
- Male brains show frequent rest periods i.e., “not thinking about anything”. This happens many times a day. Women’s brains do not do this except during sleep. Women often interpret this difference incorrectly as “withholding” behavior or a desire not to share.

- Male brains have 6.5X more gray matter. Gray matter serves as information processing centers. This localization drives focus, focus, focus. Females have 10x the amount of white matter, contributing to connectivity between the information centers, permitting more multi-tasking, more language facility, and faster emotional “processing”.
- Males have more M ganglion in the retina allowing men to perceive objects moving in space more easily. Women have more P ganglion allowing them to see color and fine detail.
- The hippocampus in men is less active, contributing to less linkage between memory and the emotional/word centers of the brain. Men will often not recall emotional discussions (positive or negative ones) whereas women will often have detailed recall.
- The amygdala in men tends to be larger. When angry, the verbal circuits in men tend to shut down with the amygdala driving towards more physical expression of the emotion rather than the verbal processing exhibited by females.
- Men have 20X more testosterone and also have vasopressin. Both decrease interest in talking and increase aggression, need for social power, competitiveness, and territoriality. These hormones were essential in an agrarian society for successful hunting. Testosterone rises and dips during the day, generally peaking at roughly 9-11 AM. Some research studies of British financial traders have shown that the riskiest trades tend to occur during that time period.
- Women have more oxytocin, sometimes called the “tend and befriend” hormone. Oxytocin promotes the personal bonding useful for building community and raising children, which are inherently social tasks performed over extended periods of time.
- In women’s brains, language tends to occur in both the right and left hemispheres, whereas in men language tends to occur only in the left. If you account for writing, speaking, and reading, women use significantly more words in a day than men.
- The cerebellum in men tends to be larger than in a female brain. The cerebellum is an action and physical movement center, contributing to the male’s tendency to action and physicality.
- Women have 20% more blood flow throughout the brain. In the limbic system, one of the consequences of this increased blood flow is that women are constantly assessing and reassessing context as well as facial expressions, tone of voice, etc. Disorders that inhibit people from picking up on social nuance such as autism and Asperger’s Syndrome are roughly 8X more common in males.

- Baby girls have as much estrogen in the brain as an adult woman. Estrogen is such a potent neurotransmitter that in the first three months of life, a baby girl increases eye contact and facial gazing skills 400% more than boys. This ability to read faces is an advantage females maintain over males throughout life. LouAnn Brizendine, author of *The Female Brain*, refers to the female brain as “a machine built for connection” in part due to this ability.

Do we have to be A or B?

Actually, one in seven men and one in five women have what we call “bridge brains”. These are people who have somewhat more of the other sex’s features in terms of their brain profile. A bridge brain man for example might take fewer physical risks than many of his peers, he might avoid a highly competitive type of profession, he might be drawn to less aggressive types of sports, etc.

Cognitive science tells us the brain is capable of change via focus or what David Rock and Jeffrey Schwartz in their work on the neuroscience of leadership call “attention density”. However, while the topic of plasticity in the brain has received a lot of attention recently, some aspects of brain functioning are not as amenable to change because they are hardwired. Nowhere is this truer than in gender-based brain differences. Nurture matters but it does not trump nature. It’s more useful to think in terms of the areas of the brain that have high versus low plasticity. An example of high plasticity would be the number of languages you can learn to speak. An example of low plasticity is the fact that women have more prolactin, which produces larger tear glands and in turn, more tears.

Organizational Implications

Once people understand some of the basic differences, they tend to look at everyday situations in organizations somewhat differently. Women (and some men) who use a lot of words may become more attuned to that “glazed-over” look from men they are speaking to who think they have already gotten the point. Men may begin to appreciate how women use their relational skills to build consensus and mend fences after controversy. Let’s say there is a very difficult meeting between two departments that becomes quite heated. The stress of conflict causes cortisol levels to rise, producing more testosterone in males and more aggressive, dominant behavior. In females, the rise in cortisol produces more oxytocin, leading to more harmony-seeking behavior. Perhaps the best outcome here would be a “winning” strategy where all the meeting participants feel good about the decision even if it took longer to get there.

Managers and coaches who understand some of the basic brain differences can adapt their style of interaction with members of the opposite sex as appropriate. Let’s say a female supervisor has a very angry staff person in her office. He is totally frustrated with his team. If the supervisor reacts the way a woman is more likely to react to another woman saying, “I can see how frustrated you are. Let’s go get some coffee and tell me how you’re feeling...”, we shouldn’t be surprised if the fellow gets really upset and even more frustrated. More useful for the man would be to offer some action steps like,

“Let’s make a list of the things you’ve already tried, then generate some alternatives you can implement right away”. Perhaps subsequently, you can pursue his “feelings” about the situation with the most effective approach likely to be asking a question such as, “What do you think is happening in the organization now that might be driving this behavior on the team?”

Another critical aspect of understanding brain differences is to understand that men and women tend to embody leadership somewhat differently. While at the very highest levels of organization life, the social intelligence needed for outstanding leadership shows no difference by gender, in the general population and lower organization levels there do appear to be some differences in the ways men and women behave in leadership roles. Recognizing these differences helps us to broaden, not narrow, our pool of prospective talent. Simply put, we can summarize these differences as:

Male leaders tend to:

- Bond in short bursts of connection
- Downplay emotion
- Focus on pattern thinking
- Promote risk-taking & independence

Female leaders tend to:

- Bond via extended conversations
- Display more “hands-on” connection
- Emphasize complex, multitasking activities
- Look for methods of direct empathy
- Be more willing to relinquish independence for “interdependence”

Summary

While biology isn’t destiny, we should not be afraid to acknowledge that there are influences on the brain that come from our gender as “males” or “females”. Admitting this does not have to lead to inequality or to inequity. Instead, we can use brain science to improve relationships and communication. Understanding these areas of difference without stereotyping can enhance the ways we manage conflict, negotiate, do sales, run meetings, and lead and coach teams. It can help us to build healthier environments where men and women can be authentically who they are and contribute their best.

Suggested Readings re: Brain Research

Brizendine, L. (2006). *The Female Brain*. New York: Broadway Books.

Goleman, D. & Boyatzis, R. (2008) Social Intelligence and the Biology of Leadership. *Harvard Business Review*, 9.

Goleman, D. (2006) *Social Intelligence: The New Science of Human Relationships*. New York: Bantam Books.

Gurian, M., & Annis, B. (2008). *Leadership and the Sexes: Using Gender Science to Create Success in Business*. San Francisco: Jossey-Bass.

Haidt, J. (2006). *The Happiness Hypothesis*. New York: Basic Books.

Hewitt, S., Luce, C.B., Servon, L., Sherbin, L., Shiller, P., Sosnovich, E., et al. (2008). The Athena Factor, Reversing the Brain Drain in Science, Engineering, and Technology. *Harvard Business Review Reports*.

Rock, D. & Schwartz, J. *The Neuroscience of Leadership*. (5/06) www.strategy-business.com.