

## **Gender, Decisions and Outcomes: Improving Return**

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Published on PFNLIVE.COM Tuesday, April 14, 2009

Women and men make investing decisions the same, but also different. It is the dissimilarities that lead to unlike outcomes. For example, men trade stock more than women and thereby made less money because of trading costs. The authors, Barber and Odean, postulated that this was due to overconfidence on the part of the male participants (compared to female). Men thought they could pick more winners than losers, but when the cost of trading was figured in they didn't. Instead, they lost money.

Women are not so daring. They tend to be less confident and risk adverse rather than seeking. This is confirmed by several studies that show they invest their retirement assets more conservatively than men. When the market drops unexpectedly as it recently did, that can only be good. Of course, the reverse is also true.

A key question is why the sexes make different choices. If we knew that, perhaps we could find a way to use that knowledge to improve decision making and thereby attenuate or prevent financial disasters going forward.

Daniel Tranel and Antoine Bechara published a paper last month in the journal, *Neurocase* that addresses this issue. It is entitled "Sex-related functional asymmetry of the amygdala: preliminary evidence using a case-matched lesion approach" (<http://www.informaworld.com/smpp/content~db=all?content=10.1080/13554790902775492>) Tranel is in the Division of Behavioral Neurology and Cognitive Neuroscience at the University Of Iowa College Of Medicine in Iowa City, Iowa. Bechara is in the Brain and Creativity Institute & Department of Psychology at the University of South California, Los Angeles. They studied decision-making as well as social conduct, emotional processing and personality in male and females that had amygdala damage. They found support for the concept that there is a sex-related functional asymmetry of the amygdala. Left sided damage led to female, but not male dysfunction. The reverse was also true.

This is interesting because of the important role of the amygdala. It triggers non-conscious emotion that is needed for arousing a specific portion of the prefrontal cortex to take action in making judgments of right or wrong. The prefrontal cortex is the executive decision making part of the brain. It is the ventro-medial prefrontal cortex (VMPC) portion that designates moral judgment important. In an earlier paper, the authors found that the VMPC was more important on different sides of the brains in each sex. Interestingly, the side correlated with the findings in the amygdala study. In women, the left amygdala and VMPC were more important and in men it was just the opposite. The authors postulate that this could be because it was phylogenetically advantageous for men to have emotional process tied to the visual-spatial system (right sided) and for women to have it coupled to the verbal (left sided). This is because hundreds of thousands of years ago, as the brain was evolving, men needed hunting skills that depended primarily on nonverbal processes. Women, on the other hand, required speech to negotiate with others (crucial to their survival since they were the weaker

sex) and teach their offspring.

The study is preliminary consisting of a small number of patients who had severe epilepsy that required temporal lobotomies that included the amygdala. These are limitations that the authors plan to reduce in the future with follow up studies. Nevertheless, this research continues to tell the story of why we behave as we do. It suggests that the process of decision making is intimately connected to the very core of our being, our brains, which are unlike, female compared to male (at least in subtle ways). These differences lead to divergent choices and outcomes. Because the origin of the disparities are physiologically ingrained, training a man to think like a woman and vice versa to improve decision making would likely prove not only difficult, but an attempt to change someone's very nature. This seems like a lot of work that would have a chance of backfiring because when people are under stress, they tend to revert back to their innate behavior. Another option, more easily viable, would be to even out the numbers of each sex that make important decisions that affect others such as stock, bond, and asset allocation selections. The result, more balanced decisions made more consistently, could do a lot to put money in everybody's pocket. This recent market proves that in spades.

### **In a Nutshell**

The speech area is on the left side of the brain and the visual-spatial on the right.

In studies of patients with damage to a specific area of the brain (amygdala), left sided damage led to female, but not male dysfunction. The reverse was true.

This suggests that there is a sex-related functional asymmetry of the amygdala important in decision making.