

This Is Your Brain on Mediation: What Neuroscience Can Add to the Practice of Mediation

By Daniel Weitz

Introduction

A group of undergraduate students at New York University were chosen for the experiment.¹ Everyone was given a list of five word sets and asked to make a grammatically correct four word sentence out of each set. These are called scrambled sentence tests. For example, students are presented with the following: "feels weather the hot patience." This five word set could be unscrambled to read "the weather feels hot." However, students in this experiment were actually given one of two different lists containing words meant to "prime" them to behave in a specific way. Mixed into one list were words associated with being polite; mixed through the other list were words associated with being rude. When the students were soon placed in an experimental situation to measure the degree to which they would act polite or rude, their behavior correlated with the words with which they were primed.

After completing twenty variations of the scrambled sentences the students were instructed to take the completed lists down the hall to the Professor's office where they were to be collected and scored. When the students arrived at the Professor's office, there was another student standing in the doorway asking the Professor a series of questions. The real test was to see how quickly the students would interrupt or how long the students would wait before interrupting to hand in the completed test. The students who were primed with polite words waited longer on average than the students who were primed to be rude. In fact, the overwhelming majority of the students primed to be polite never interrupted at all.² Simply priming them with words associated with being polite made them wait longer than those students who were primed with words associated with being rude.

Advances in neuroscience have given us an unprecedented look at the human brain and human behavior. Discoveries have followed in disciplines ranging from cognitive-behavioral psychology to molecular biology. To what extent these discoveries impact other fields, including the dispute resolution profession, is now a hotly pursued topic. While a quick survey of recent studies of the brain opens a flood of connections to the practice of mediation, even neuroscientists caution against the certainty of their findings. There is still more research to be done and many of these studies provide evidence of correlation but not necessarily causation. Perhaps we too should resist the temptation to champion a long sought after scientific basis for all that we do. However, there is no denying the fascination with what we are learning

about the human brain and how it guides our behaviors and impacts the way we make decisions. At a minimum, it is cause for great reflection.

Our Negative View of Conflict

Mediation training programs often begin with a conflict word association exercise to explore the nature of conflict. Trainees typically produce a list of similarly negative words including argue, fight and disagreement. This list propels a lively discussion of why we tend to view conflict as something negative. We point to television, our past experiences and even our parents. After encouraging reflection, sometimes through small group exercises, mediation trainers ask if anything positive ever comes from conflict. Trainees list a number of positives including clarity, recognition, understanding and improved relationships. The trainer then hopes the group will come to appreciate that conflict is not inherently good or bad but that the nature of conflict is instead a function of how it is handled.

Recent discoveries in neuroscience shed even greater light on our negative associations with conflict. For example, significant research has been done on the importance of sleep.³ This research supports the position that we consolidate learning and store memory during sleep. In *Nurture Shock*, Po Bronson and Ashley Merryman report that negative memories are stored in the Amygdala (an area of the brain associated with strong emotions such as fear) while neutral and positive memories are stored in the Hippocampus (an area of the brain not only associated with storage of memory but conversion of short-term to long-term memory as well). Furthermore, lack of sleep is harder on the Hippocampus than it is on the Amygdala. So, when sleep deprived, we have a harder time remembering neutral or positive feelings and events since our Hippocampus is adversely affected by the lack of sleep. Meanwhile, the less-affected Amygdala has little trouble helping us to recall negative feelings and events. Therefore, since people often lose sleep during periods of conflict or crisis, could this explain why we so often judge people with whom we are in conflict by their most negative potential? How often have you heard people in conflict say "I can't think of one good thing to say about him?" Other studies have shown that stress can cause a similar effect on the Hippocampus. During situations of stress, hormones called glucocorticoids are released in the brain.⁴ Glucocorticoids are known to cause damage to the Hippocampus. In fact, under extreme conditions, glucocorticoids can kill brain cells in the Hippocampus. This

suggests that stress, and the brain chemistry connected with it, is not only related to our negative view of conflict but perhaps our negative view of those with whom we have conflict. Furthermore, it is not a far stretch to connect our negative view of conflict with our propensity toward competitive approaches to conflict. Is it possible that our negative view of conflict not only impacts how we approach it but also increases the likelihood that we will adopt a competitive style when a collaborative style would be optimal? The perception that conflict is inherently negative quite possibly precludes many disputing parties from even trying mediation when it would otherwise be helpful to them.

We Can Change

During much of the twentieth century, the prevailing theory was that our brains were pretty much completely formed and unchanging after childhood. However, recent discoveries have provided evidence of neuroplasticity, which challenges the assumption that our brains are done developing once we reach adulthood.⁵ For example, studies have shown that physical exercise can improve cognitive function and even brain physiology.⁶ Exercise also appears to stimulate a protein known as BDNF or Brain Derived Neurotrophic Factor, which aids in the development of healthy tissue. In *Brain Rules*, molecular biologist John Medina refers to BDNF as having a powerful fertilizer-like growth effect on certain neurons in the brain. According to Medina, BDNF not only keeps neurons young and healthy, which enables them to better connect with one another but it also encourages the formation of new cells in the brain.

If our negative view of conflict is indeed largely a conditioned response, perhaps we can change it. Mediation not only provides help with resolving the conflict at hand, it provides an opportunity to develop constructive conflict resolution skills that can be used well into the future.

Application of Neuroscience to Mediator Skills

Discoveries in neuroscience can be associated with a variety of mediator skills including the delivery of an opening statement and framing negotiable issues. The application of these skills relate to a number of discoveries including the psychological phenomenon of “priming” and the “framing effect.”

The Psychological Phenomena of Priming and the Utility of Mediator Opening Statements

Most mediators begin the initial meeting with an opening statement. This is particularly true of mediators who deal with interpersonal conflict including divorce or community or workplace mediation. The goals of an

opening statement include educating the parties about the process, developing rapport and trust, and setting the tone for a collaborative negotiation. Despite the apparent benefits of providing an opening statement, some mediators question its utility. Critics of a mediator opening statement say it takes too long and much of it is a waste of time as the parties are too distracted to absorb the content. While some openings may go on longer than necessary, the phenomenon of priming lends support for the use of mediator opening statements.

Recall the priming experiment, discussed above, conducted by Professor John Bargh and colleagues at New York University. There is an enormous body of research demonstrating the ability to prime subjects with subtle words to act in a seemingly limitless variety of ways. Research has shown that priming can make us slow or fast or even good or bad at math.⁷ But before I tell you about math, let us finish the discussion of opening statements.

Think about the words mediators emphasize in their opening statements. Most give meaningful emphasis to words such as listen, understand, comfortable, confidential, freely, and informal. Mediation trainers and teachers often discuss the benefits of a good opening statement in order to set the tone for mediation. We want to establish an atmosphere of cooperation and open dialogue and in doing so distinguish mediation from its adversarial alternatives. While most mediators have always appreciated the power of a good opening statement, we now have reason to believe there is a scientific explanation for its effectiveness as well. According to the phenomenon of priming, we are a lot more susceptible to outside influences and our unconscious than we realize.⁸ When we deliver opening statements, we have the potential to prime the parties to act in a manner consistent with the words we use. Furthermore, given our tendency to associate conflict with that which is negative, parties are likely primed to behave poorly in conflict. At a minimum, they are primed to adopt a competitive and adversarial approach to conflict. Therefore, a mediator’s opening statement is not only an important aspect of establishing a collaborative atmosphere but perhaps it plays a role in neutralizing the way in which parties are negatively primed as they enter the process.

The Framing Effect and the Utility of Framing Negotiable Issues

The research that shows we can be made to perform better or worse in math ties the priming phenomenon with another psychological phenomenon known as the Framing Effect. In a study conducted by Sian L. Beilock from the University of Chicago,⁹ a group of female undergraduates were given a series of relatively simple math problems known as modular arithmetic. Students were given horizontal math problems, represented by a left-to-

right linear equation as well as vertical math problems represented by numbers above and below one another forming the equation. Then, half of the female students were reminded of a negative stereotype, for example, that “women do not do as well as men on math.” This form of priming is called the “stereotype threat condition” in which simply reminding people of a stereotype can induce anxiety which in turn decreases performance. This allowed Beilock and her colleagues to explore how a high-stress situation creates worries that compete for the working memory normally available for performance. After all, if we are stressed out and anxious, there is going to be less working memory available to deal with solving the math problems.

Jonah Lehrer, a frequent writer in the field of Neuroscience, described the results of Beilock’s study on his blog *The Frontal Cortex*. As it turned out, the activation of the stereotype led to decreased performance, but only on the horizontal problems. The reason has to do with the local processing differences of the brain. The horizontal problems depended more on the same area of the brain (the left prefrontal cortex) associated with anxiety and would likely be preoccupied worrying about our math performance. In contrast, performance on vertical problems was unaffected. The vertical math problems are perceived primarily as visual spatial problems which are associated with a different area of the brain (the right prefrontal cortex) which is not distracted by our anxieties or threatened by stereotypes. In other words, according to Lehrer, “merely changing the presentation of the problem can dramatically alter how the brain processes the information.”¹⁰

Beilock’s study should also remind mediators of a classic skill we call framing negotiable issues. Mediators are trained to frame issues in neutral language to invite interest-based discussion rather than adversarial positional bargaining. This is done in order to avoid adopting the position of one side or the other and to create an inviting agenda that encourages meaningful dialogue. We frame issues neutrally to take the sting out of the topic. Thanks to Sian Beilock, we now know it also changes the way in which the brain actually processes the information. Perhaps it even mitigates the anxiety produced by conflict.

Conclusion

It is the rule of thumb among cognitive scientists that unconscious thought is 95% of all thought.... Moreover, the 95% below the surface of conscious awareness shapes and structures all conscious thought.

George Lackoff¹¹

We have only seen the tip of the iceberg when it comes to the application of Neuroscience to the world of dispute resolution. We have seen how the psychological phenomenon of “priming” and the “framing” effect can be correlated with mediator skills including the delivery of opening statements and framing negotiable issues. However, there is much more to learn. But unlike 95% of our unconscious thoughts, advances in neuroscience make it possible for us to consciously appreciate that which we continue to learn about the brain and to think and reflect about how it applies to the field of mediation.

Prolific author Malcolm Gladwell wrote in *Outliers* that “Plane crashes are much more likely to be the result of an accumulation of minor difficulties and seemingly trivial malfunctions.” This serves as a useful metaphor for any discussion of mediator skills. Focus on or use of any one skill will not by itself change the nature of the dialogue between the parties in mediation. In order to help the parties land their conflict safely, we need to use an accumulation of skills that may seem trivial when viewed in isolation. When explored in the context of Neuroscience, we can begin to see how these individual skills, utilized in conjunction with many others, can have a dramatic impact on conflict resolution and human behavior.

Endnotes

1. See Malcolm Gladwell, *Blink*, Paperback ed. (New York: Back Bay Books/ Little, Brown and Company, 2007), 55 (describing a study conducted by John Bargh, Mark Chen and Lara Burrows at New York University).
2. *Id.*
3. Po Bronson and Ashley Merryman, *Nurture Shock* (New York, Boston: Hatchett Book Group, First Edition 2009), 35
4. John Medina, *Brain Rules* (Seattle: Pear Press, 2009), 179
5. See Norman Doidge, M.D., *The Brain that Changes Itself* (London: Penguin, 2007).
6. John Medina, *Brain Rules* (Seattle: Pear Press, 2009), 14
7. See Iain McGilchrist, *The Master and His Emissary* (New Haven, London: Yale University Press 2009)
8. Malcolm Gladwell, *Blink*, Paperback ed. (New York: Back Bay Books/ Little, Brown and Company, 2007), 58.
9. Sian Beilock, *Math Performance in Stressful Situations*, Current Directions in Psychological Science, Volume 17-Number 5 (Association for Psychological Science)
10. Jonah Lehrer—The Frontal Cortex http://scienceblogs.com/cortex/2010/04/dont_choke.php (posted April 13, 2010).
11. G. Lackoff and M. Johnson, *Philosophy in the Flesh* (New York: Basic Books, 1999), 13

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