

## **Applying Neuroscience in Business**

### **“Brief” on Disruptions in the Dimension of Focus (Under Focus)**

*The fully array of processes associated with the application of neuroscience in business cannot be explained adequately within a few written documents. To bridge the gap between neuroscientists and business professionals, however, The Center for Modeling Optimal Outcomes®, LLC (The Center) has chosen to explain some of the applications of neuroscientific activity in a context many non-scientists will be able to understand; relating decision making processes to neurological activity. To accomplish this objective, The Center has prepared two “briefs” to describe the two ends of the decision making spectrum; i.e. under and over focus. This document provides a basic overview of the impact that under focus can have on optimal decision making. A copy of the “brief” for over focus can found at: [Dimension of Focus \(Over Focus\)](#).*

*Details pertaining to the activities of The Center’s Business Services group and additional information concerning the intellectual property of The Center relative to neuroscience in business is available at the [Business Services](#) section the web site. In addition to the application for optimal decision making, The Center’s intellectual property encompasses a new generation of concepts for team dynamics (Team Intelligence®), leadership pipeline development based on categorization of *How People Think*®, processes to train critical team members (e.g. innovation and strategic planning) to overcome bias and prejudice in decision making and several other transformation processes.*

*To fully understand the dynamics of homeostasis of the neurohormones referenced herein, the reader must first gain an understanding of the [Model for Homeostasis](#) of the body’s substances. A tutorial for the Model is contained on The Center’s web site. After review of the tutorial, it also advised to read the “brief” for [dementia](#) in order to gain a basic understanding of the pairing of neurohormones that is required in order to maintain homeostasis/equilibrium of thought processes.*

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Today’s “rage” over “video gaming” is, in reality, Technology Obsessive Hyperactivity Disorder (TOHD) – a term coined by The Center for Modeling Optimal Outcomes®, LLC.

Relative to psychology and neurobiology, TOHD is the brain’s mechanism for ensuring the release of oxytocin (contentment) in order to protect itself from excessive aldosterone (i.e. the neurohormone that causes cell death in the hippocampus).

**“The brain isn’t interested in reality; it’s interested in survival.”<sup>1</sup>**

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<sup>1</sup> Interview with brain expert John Medina, *The Science of Thinking Smarter*, Harvard Business Review,

The process of creating “addictive” thoughts and behaviors is one driven by the subconscious brain through the same dynamics of neuroplasticity (plasticity) as that of other Obsessive-Compulsive behaviors; including but not limited to pornography, gambling, alcohol consumption and being a workaholic.

Simply, if you do not pick a hobby that you enjoy, your brain will do it for you and it could be “ugly.” The difference will be whether you are **consciously aware** of your “need” to partake in the activity to release oxytocin or not!

What has happened to hobbies such as book reading, stamp and coin collecting, crossword puzzles, knitting and the many other forms of enjoyment that did not consume so much of our time in past decades (without being obsessions)? Has the pace of society in the US hastened with the result being excessive anxiety (thus creating subconscious thoughts that release aldosterone – the brain cell killer)? Has today’s generation become one of faster-quicker-now decision making and actions? Does today’s “faster” generation realize they are thinking based on habits of thought; i.e. being driven by subconscious patterns of thought created by plasticity – decision making based on speed as opposed to quality. Of course not...the brain resists admission of addictions of any type; especially ones associated with flawed internal processes for decision making.

It seems like today’s “faster” generation is searching for an obsession; anything to save the brain’s cells. **The brain must survive!**

Nearly all decision making is determined by subconscious thought processes created over time as a result of experiences (i.e. the habitual thinking that creates new neural architecture through plasticity). In the business world, these subconscious thoughts are considered to be intuition when, in reality, they are processes based on one’s accumulation of experiences. Individual’s who have amassed a treasure chest of experience (knowledge) based on past outcomes resulting from decision making are deemed to be highly intuitive. However, when this tacit knowledge is analyzed from the aspect of explicit thought processes, it becomes apparent that decision making can be refined and replicated through education.<sup>2</sup>

Unfortunately, since today’s pace is so torrid, deliberation is often perceived by the brain’s habit of thinking as being too time consuming (a subconscious decision driven by plasticity). Speed trumps logic!

### **The Science (Neuroscience) Behind Decision Making**

Because habitual subconscious thought process form new neural architecture driven by the dynamics of neuroplasticity, the business world is facing an evolving crisis. With speed, cognitive quality suffers; i.e. frequent change (excessive dopamine) disrupts homeostasis between dopamine and norepinephrine. Norepinephrine is reduced when dopamine is increased. Norepinephrine needed for deliberation and focus is not available.<sup>3</sup>

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<sup>2</sup> The cognitive formula for logical decision making is provided in the Business Services section of The Center’s web site --- [Applying Logic to Decision Making](#)

<sup>3</sup> Based on the principles for homeostasis between the body’s substances, a higher level of one neurohormone (dopamine) can leave excessive quantities of another (i.e. norepinephrine).

Dopamine is the neurohormone that drives change. In excess quantities; the outcome is impulsivity and constant change.<sup>4</sup>

To slow the rate of brain activity, the brain uses a subconscious defensive maneuver; i.e., finding an activity that will provide ample enjoyment (oxytocin) in order to prompt attention to the activity (releasing norepinephrine) to increase focus onto it. By reconfiguring neurohormones (depleting dopamine that creates constant change) the brain slows its own mental functioning activity as a defense. Whether or not the activity chosen is done through conscious or subconscious decision making, the outcome will be the same – oxytocin (enjoyment) will offset aldosterone (anxiety); thus preventing the killing of excessive brain cells.

The brain's complex system of defensive maneuvers includes the need for reconfiguration of the ratio of neurohormones in order to avoid unnecessary death of brain cells (apoptosis). For example, when the logic neurohormones (norepinephrine - prolactin - dopamine) are disrupted due to boredom or the lack of an issue or topic of interest (lacking the need for norepinephrine) the brain's homeostatic levels of neurohormones are disrupted. An increase in the levels of dopamine due to the lack of norepinephrine (focus) allows the brain to drift into a state of impulsivity/constant change of thoughts while attempting to identify something of interest. Such a scenario disrupts homeostasis between neurohormones that must be corrected by the brain. Simply, reconfiguration of the neurohormones must take place in order to restore homeostasis. To execute this maneuver, the brain will trigger subconscious thought processes to create a fixation onto something that will produce enjoyment (release of oxytocin) to offset anxiety/distress that occurs due to the brain's inability to find a "calming/enjoyable" activity. Without calming and enjoyable thoughts, aldosterone – the killer of brain cells – will be released). The brain must act to protect itself. It makes a subconscious decision. Bingo. Mission accomplished...maneuver completed...obsession established...brain cells saved!

**Pick your source for the release of oxytocin or your brain will. Today, more and more individuals (many of the <30 years age category) are opting to use video gaming and other electronic technologies as their source for oxytocin. While more socially acceptable than many other alternatives; gaming, texting and other fast paced applications of technology create subconscious habits of thought that form new neural architecture; a configuration that drives faster-quicker-now as primary subconscious variables for decision making.**

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<sup>4</sup> <http://www.nytimes.com/2009/10/27/science/27angier.html>