

A CONCEPTUAL STUDY ON APPLICATION OF NEURO PLASTICITY FOR LEADERSHIP DEVELOPMENT: A LEADERSHIP PERSPECTIVE

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Abstract: Neuroplasticity is the process by which a brain remembers new tasks, functions and ideas which is not a fixed entity, a trainable managed or encouraged to greater capacity and efficiency. **Neuroplasticity**, known as **brain plasticity**, is an **umbrella** term that encompasses both synaptic plasticity and non-synaptic plasticity and refers to changes in neural pathways and synapses which happens due to changes in behaviour, environment and neural processes, as well as changes resulting from bodily injury. Recent research clarifies that Neuroplasticity helps in recognising a person's inner potential and if practiced religiously for developing self, evidences around the world is recommending usage of neuroplasticity to attain growth, and hence application of neuroplasticity in leadership development does fetches results, is what this study with the conceptual clarity obtained around the world is revisited through this article.

Keywords: Neuroplasticity; Workplace; plastic; Leadership; Globalk workforce; Conceptual Clarity; sensation

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Introduction: Global Workforce Leadership survey, states leadership is the hardest skill to find in employees, and leadership training courses rely on employees to retrain their skills and use their experience and brain to think like a leader. Nevertheless the purpose of leadership development is yet to be resolved as it requires a unique competitive critical skill for their leaders and to begin, and train its employees for which brain needs a specific amount of energy. Hence a proper space to develop new thought processes, for which neuroplasticity is now 21st century development tool and the recent consensus of neuroscientists on the brain structure is challenged by findings that many aspects of the brain remain plastic even into adulthood. Research proves that substantial changes occur in the lowest neocortical processing areas, and this profoundly alters the pattern of neuronal activation according to experience. Various research studies indicate the brain's physical structure (anatomy) and functional organization (physiology) promises lot of advancements in the area of personal growth of a person, and that even leadership development is attributable.

A prerequisite conducive environment and routine: The organisations intending to create an environment where the new knowledge will be used and that the brain can create associations between background sensations that occur during a study session and the content being engaged with. Let us consider this situation as an example, we tend to listen to similar music while studying if music usually plays in the office with discomfort because by the time the brain ties information being learned to the surroundings, and consider studying in a variety of places to create as many connections with the information as possible, at the same time, removes distractions and temptations that may derail the habit-forming process. **Remedy the tiring brain by taking regular breaks:** A 2015 study from the Harvard Business School identified participants who were given a break to reflect on the given task performed better at greater rates than participants who just practiced a task. Hence reflection by writing down important takeaways, as well as strategies and goals for the next session, sleeping shortly after learning something new helps retain information and improves memory, was a breakthrough finding. Similar study also found people who work long hours tend to be less productive. **The 2015 Staples Advantage report found that 69 percent of the staff say that working long hours decreases productivity, while 64 percent said adequate breaks increase productivity. Work filled with fun and enjoyment improves results:** Any work where there is dearth for

enjoyment at that work, the positivity disappears and productivity lowers. Prioritizing enjoyment is now crucial to doing anything productive. The recent innovative Wearables are engaging people in fitness in meaningful ways -- 77 percent of those surveyed by Accenture in 2016 said that using wearables makes them feel more engaged with their health. **Wearables at Work needs a greater consideration.** The training process are getting more creative with gamification as a part to make training a more enjoyable and interesting and with introduction of Apps like Lumosity are great for brain training games that incorporate gamification and track progress. The scientifically proven interactive programs provides results in real time to keep motivation high. A 2015 study from Intercall found that 56 percent of 200 employees surveyed use online courses that encourage engagement and interaction. Since Leaders are decisive and driven to solve problems, so focus to develop leadership needs to go with efforts to improve the skill called the decision-making skills and problem solving.

Objectives of the Study:

- (i) To explore the advancements and applications of Neuroplasticity in Leadership Development**
- (ii) To examine from the review of literature research the future of Neuroplasticity**
- (iii) To evaluate the methods of improving neuroplasticity**
- (iv) To understand the application areas of neuroplasticity in leadership development**
- (v)**

Scope of the study: Contribution of new theoretical principles and possibilities of applying the most effective method to improve neuroplasticity.

Methodology: A conceptual analysis using the previous research reviews and other training notes on neuro science literature related to management practices

Data: Secondary sources like the literature sources of neuroscience and its application and data collected are mostly non-clinical and results from meta analytical mode are interpreted.

Review of Related Literature:

Mintzberg (1979) found that a key feature of professional organisations is that professionals have a large degree of control. The ability of managers, politicians and others to influence decision-making is more constrained within these organisations than in others. Mintzberg calls this type of organisation a ‘professional bureaucracy’. An important feature of professional bureaucracies is that they are oriented to stability rather than change. Jobs in professional bureaucracies are highly specialised but minimally formalised (Mintzberg, 1980; Friedson, 1986).

Reinertsen et al (2007) summarise a number of these positions within their report for the IHI on engaging doctors in leadership. In so doing, they emphasise the complexities and difficulties in the relationship between doctors and managers. In part, these complexities result from the systems and structures of healthcare, and in part they stem from the differing values, cultures and beliefs of these groups. Reinertsen and colleagues point out that doctors tend to have an individualised focus on patients, which may be at odds with most managers’ views and improvement programmes which tend to take a more systems wide view.

Reinertsen et al’s (2007) framework for engaging doctors in quality and safety initiatives. This framework comprises six primary elements, which are made up of a range of components and is based on the researchers’ experience from “best-in-the-world laboratories”. The framework is intended as a tool to assist hospital leaders to develop and execute written plans to improve medical engagement in quality and safety initiatives.

Fitzgerald and colleagues (2006) suggest that there is sufficient evidence to demonstrate that clinical leaders can play an influential role as promoters and inhibitors of changes (e.g. Pettigrew et al., 1992). Fitzgerald and colleagues emphasise the potential influence of those occupying hybrid roles, like clinical leaders, in bringing about change, while also noting the slow development of such roles, particularly in primary care. In comparison with previous work, they note ‘some modest developments in the proliferation of clinical and medical director roles and the establishment of the British Association of Medical Managers as a professional association’

while observing that clinical managers 'do not yet have a coherent work identity or credentialised knowledge base' (p. 170).

Firth-Cozens and Mowbray (2001) suggest that leaders are able to directly affect the safety of their teams' actions and outcomes - which are both clearly important for quality of patient care. The researchers cite studies from areas such as airline safety (e.g. Chidester et al., 1991) that illustrates the importance of leader personality type and how this impacts upon culture. Further, there is an established evidence base from high-reliability industries (e.g. Weick, 1987; Reason, 2000; Ojha, 2005) which point to the role that leadership plays in forming organisational culture, and the consequences of this for safety.

Edmonson (1996) demonstrated that in terms of medication errors and quality of teamwork in nursing good teams recorded more errors than bad teams – where the bad teams tended to be led in a dictatorial and hierarchical manner and individuals were afraid of reporting errors. Leadership style is also cited as impacting upon quality of care in other ways.

Firth-Cozens and Mowbray (2001) cite a number of studies which demonstrate links between stress of staff in teams and the quality of patient care. The authors argue that team functioning impacts upon stress levels and that leaders play an important role in the production of effective teams.

Corrigan et al (2000) demonstrated these links directly in a study of leadership style in 31 mental health teams where clients were asked to rate satisfaction with treatment programmes and quality of life. The researchers suggested that the ratings by leaders and staff members independently accounted for about 40 per cent of variance in client satisfaction.

Blake, Strozzi-Heckler and Haines (2010) are of the opinion that the somatic approach, which is a more physiological than cognitive approach, is the most direct route to developing behavioural and interpersonal skills of leaders (Blake et al., 2010: 1). They are also supporters of the new neuroscientific research which postulates that neuroplasticity shows that the brain is far more malleable in adulthood than once thought. It is also believed that although the brain is able

to change/adjust, it is also fairly resistant to change (Blake et al., 2010: 2). The authors discussed how behavioural tendencies are built biologically through regular recurrence over time. Behavioural tendencies are believed to only change in the same way, namely by engaging the whole self in an ongoing, repeated practice (Blake et al., 2010: 4). The authors made the connection that the limbic system mediates emotions and the evolved neocortex is responsible for logic and reason within human beings (Blake et al., 2010: 4-5). These two parts of the brain work together in that the rational decision-making centres of the brain (neocortex) are heavily influenced by information from emotional and sensory centres (Blake et al., 2010: 6).

Celano (2013) summarised key concepts and illustrated findings from neuroscience that may be relevant to professional family practice (FP) and discussed how the information may affect the conceptualisation and interventions (Celano, 2013: 124). This article deals with the investigation into how brain activity is associated with emotion and behaviour and specifically neuroplasticity's role in brain activity (Celano, 2013: 124). The author studied how the amygdala impacts behaviour in individuals when a fear response is evoked. The author argued for neuroplasticity as a possible tool to aid individuals that experience anxiety as a result of fear and how the brain can be altered through neuroplasticity in order to change their emotional responses to one another (Celano, 2013: 124).

Kets de Vries (2013) used a case study to illustrate the exploration of the phenomenon of the 'Aha!' moment of coaching or as he termed it, the "tipping point" (Kets de Vries, 2013: 152). Of particular interest was his discussion on how coaching can achieve the "tipping point. He postulated that if this kind of coaching is done correctly it will stimulate the creative process and help the client achieve a deeper level of emotional intelligence (Kets de Vries, 2013: 153). He Stellenbosch University <https://scholar.sun.ac.za> 5 linked brain functioning to these "tipping points" and once it is reached has a neurological foundation. This is so because when a person solves problems which require creative insight, the brain activity differs from the way it behaves when a person engages in a more linear problemsolving activity (Kets de Vries, 2013: 156).

Kets de Vries (2013) discussed the connection between emotions and neuroscience, especially regarding the function of the amygdala in highly emotional events (Kets de Vries, 2013: 156).

Through coaching towards reaching the “tipping point” in problem solving, the clients could also potentially build on their emotional regulation competencies (Kets de Vries, 2013: 152). Long (2006) investigated the recent developments in physical and biological sciences and how these findings add to a new foundation of social theory (Long, 2006: 78). The relevance of this article was the exploration of how evolutionary paradigm suggests that the brain develops to interpret threats and also weigh value as an abstract concept. It was discovered that the brain regenerates and re-programmes itself throughout life in response to both environmental challenges and the force of attention and will. This means that it is possible to change social behaviour through the process of neuroplasticity, which is defined as the process of where the connections in the brain get altered through ongoing experiences (Long, 2006: 86). The altering of the brain connections does, however, take significant effort on the individual’s part. The author postulated that human beings inherent specific universal traits and in order to change these certain behaviours require “painstaking” effort through the internally generated force of will in conjunction with external environments (Long, 2006: 83). This effort of changing behaviour or changing a habit, (the result of the process of where an emotion and related thought repeat themselves (Long, 2006: 90)) supports the need for coaching as a technique for behavioural change.

Ringleb and Rock (2009) inferred that it is generally accepted practice in both the managerial practice and in coaching in general to use questioning when one wants to motivate insight within individuals. This supports the practice of coaching for performance (Ringleb & Rock, 2009: 2). The authors highlighted how emotions play a crucial role in leadership development. They also support mindfulness as a technique to create awareness within individuals, especially when it comes to emotional stability or emotional reactions to certain threatening situations (Ringleb & Rock, 2009: 3). They investigated neuroplasticity and how it is of great interest to coaches and leadership development practitioners (Ringleb & Rock, 2009: 5). Of particular interest is their discussion on the SCARF model for coaching. The SCARF model was developed taking neuroscience and especially neuroplasticity into account.

Schwartz, Stapp and Beauregard (2005) discussed a neuro-physical model of mindbrain interaction based on new developments in neuroscience and how the brain works. It explains Stellenbosch University <https://scholar.sun.ac.za> 6 how this model is able to represent more

adequately than the classic concepts, the neuro-plastic mechanisms relevant to growing a number of empirical studies that looks at capacity of directed attention and mental effort in order to systematically alter the brain function (Schwartz et al., 2005: 1). The authors supported the idea that with appropriate training and effort people will be able to alter the neural circuitry in their brains which is associated with a variety of mental and physical states (Schwartz et al., 2005: 2). The term the authors used in order to explain this process is called “self-directed neuroplasticity”

Objective: (i) : To explore the advancements and applications of Neuroplasticity in Leadership Development

The Indispensable Keys to Neuroplasticity for Personality Development: Physical and Aerobic Exercise: Physical and Aerobic exercise improves blood flow that increase neuron growth and since the brain is only 2% of our body mass but it consumes 20% of our oxygen and nutrients. Physical and Aerobic exercise increases the volume of white and grey matter in the brain. A minimum of 30 minutes three times a week is recommended. **Sleep:** A healthy adults needs between 7-9 hours of sleep (Teens need 8.5 – 9.25 hours). During sleep our brain has the chance to integrate learning and also combs through information and decides what is needed and what is not. **Food;** The brain needs Omega-3s (found in certain nuts, salmon and spinach) and vitamins from foods. Healthy food and a balanced diet is the soil in which mental seeds can grow. **Novelty;** New experiences stimulate neuronal connections. These experiences have to increase in challenge in order to create new growth. **Close Paying of Attention;** The close paying of attention (as in study and focused attention) increases neurotransmitters responsible for creating new neural connections.

The functional understanding on Neuroplasticity:In simple words the ability of the brain to change itself within limits e.g. learn to be a Leader at all levels, as a self-authoring person, respected husband, role-model mother, successful entrepreneur or CEO of an iconic brand. As Jack Welch said in the GE way “if you have a simple consistent message and you keep repeating it, eventually that’s what happens – that’s how you get through.” Neuroplasticity is the mode of forging new, stronger pathways in the brain, that creates new links between neurons, new pathways, and with each practice it grow stronger. Each time a new behaviour or attitude is brought into, the old ones, weaken. Neuroplasticity occurs through three main mechanisms

myelination, synaptic connection and neurogenesis. **Myelination** is the wrapping of a white coating around neurons to speed up transmission along them, so in the business setting this is most akin to becoming even better at something are already good at. **Synaptic connection** and growth in critical areas like making new connections between existing neurons, and allowing the map in the brain for that particular skill to grow (like using one language more than another, and the disused one takes up less space in the brain and the more used one takes over some of its space). This is applicable to the workplace in terms of improving a skill you are already good at and have remaining potential to grow. **Neurogenesis** : Neurogenesis involves growth of new neurons from embryonic nerve cells (progenitor cells) and often likely to develop a skill that doesn't come out of a natural talent for or have never practiced before. The one that is probably the hardest to achieve and the unfortunate thing is it does not happen a lot in the adult brain.

Objective : (ii); To examine from the review of literature research the future of Neuroplasticity

The Future of Neuroplasticity: It is understood from the above that Neuroplasticity is a process by which a brain learns or acquires new skills, thought processes or emotions is now seen as a primary indication of both mental capacity and future potential. The process can be encouraged or nurtured. Hence the interest of the Training industry has taken neuroplasticity as the mainstream. The race is on to translate its insights into practical applications at work. The neuroscience of leadership is rapidly breaking new ground in leadership training, deepening the thought process as how the brain works and how it can maximise the potential to improve effectiveness at work and build better relationships. Ultimately, better knowledge about brain helps to inform a wide range of interpersonal skills, as well as project planning and management practices, that have a positive impact on organisational performance and aid the creation of an agile learning organisation. Neuroscience is becoming indispensable tool in the management area and leadership development area. **Applications of Neuroplasticity are making inroads in management development and leadership development:** The effects of the recession, and the road to economic growth, happened just with a shift in mindsets from 'cost avoidance' to 'growth and profit'. Leadership style need to be different as they moved forward even when things were extremely daunting, against that which challenged even the most competent leaders. However, much will depend on how the workforce has been led during the period of

recession. Have people been continuously aware that this day was coming, or will it come as a surprise to them that they are now expected to do things differently, think differently, perhaps adopt new practices. **Even unpleasant circumstances become comfortable after a while, and people will resist moving away from the ‘way things are’ even if they are promised a better future.** It’s not enough to simply promise things will get better and hope they will change. One major reason for this, we now know, is because of the way our brains are organised. Regular patterns of thinking and behaviour become ‘wired’ at the neural level. It is certainly not a trivial matter of expecting people to one day waken up and operate as if they had a different wiring pattern. *Not even after the most rousing and stirring ‘all-hands’ kick-off event !!* Our brains need to have new connections created (*and old connections disused and atrophied*) over a period of time in order for new patterns of thinking and behaviour to take root. New visions, positive futures, different expectations, alternate rewards, all help generate these new connections, and ultimately, different behaviours. **Learning to Avoid Brain’s Negativity Bias;** A simple model of how the human brain is built up over tens of thousands of years of evolution. **The Lizard Brain:** Called the old brain and very similar in character of a reptilian brain. It alerts us in dangers. The lizard brain is responsible for the *emotional hijack* when our emotions take over and a person actually feel like they are at the mercy of another brain. The ‘red mist’ falls across our eyes in moments of fury or fear, the lizard takes over the control. **The Mammalian Brain:** is much more concerned with seeking rewards. More sophisticated processing takes place at this layer than in the ‘old brain’, although in neuroplastic terms it is still relatively ‘rigid’. **The Primate/Human Brain:** concerned primarily with attachments and relationships, the use of communication, language, social network development and abstract thought concerned with abstract concepts such as philosophy, religion and science reveal amazing abilities for the brain to change and alter shape (by creating new connections and thickening existing connections) as a result of experiences and repeated use. **The Upstairs & Downstairs Brain:** Advances in neurosciences continue to inform our understanding of what makes us human, and perhaps even more importantly, how we interact with each other with popular assumptions about the brain and the mind, including the *tabula rasa* (blank slate) theory that humans are born void of knowledge and acquire ideas and wisdom over time from the world in which they operate. *Synaptic pruning.* Underused synapses and connections in the brain are pruned, just like weak or dead branches on a rose bush are cut away.

Objective (iii) : To evaluate the methods of improving neuroplasticity

Methods to increase Neuroplasticity: The neuroplasticity allows human being to adapt, to respond, to evolve in real time to a changing environment. It gets rid of bad habits and establish good ones? It helps people to acquire a new skill? It remain cognitively fluid and mentally limber as person ages. Neuroplasticity contribution to leadership, means to a layman is simply that don't try to become something you are not, and that there were many people who did not believe in that sort of ideology and ventured outside of their circumstances, their surroundings and their family trees to become greater than their beginnings and their supposed genetic pre-dispositions. Leadership educators and business experts have been making important connections between how the brain reacts to external stimuli such as “encouraging” management methods and negative management tactics. What is it that happens in the brain when negative stimuli are received as opposed to the positive stimuli? What is intriguing about The “NeuroLeadership” aspect is that to effect change and by learning about how the brain works (our own and others) it command our responses and our methods in a way that can have far reaching positive effects. The difference from the old way of thinking about the “static” brain, that it “is what it is” , and what we know today, is that the brain has been found to have the ability to actually change itself physically. This ability to change itself is called “neuroplasticity”. Dr. Jeffrey M. Schwartz, M.D. asserts that neuroplasticity means rewiring the brain to educate ourselves and understand how information is processed and used by our brains to become better Leaders. Changing how we process and then respond to what we receive is the key to how we react and since we now know that the brain “can change itself physically” then we now have the real keys to success as managers and leaders. learn how to use them to “turn people on” so as to get their brain to execute in ways that they have not in the past. We have known this to be true for decades and even Albert Einstein once said “We cannot solve problems with the same thinking we used to create those problems”. So, with new information in hand about the brain we now can set a new course in management, based in facts, that will help individuals, teams, educators and companies to realize far greater results when we “manage with the brain in mind” (Rock). The reason that the interest is climbing to new levels in the NeuroLeadership field seems to be as much the result of ongoing scientific research as it does the need for managers to find a way to move their companies from Point A to Point B. Without the controlled understanding of what is happening inside of the brain and how the stimulus, whether positive or negative, will impact an individual

or Teams ability to “Execute”, companies will forever be in the quandary of trying to use their “next great plan”. NeuroLeadership is a stable footing on which to build success. Learning neuroplasticity techniques is not a leadership training program but new leaders who are able to be adaptive and change their thinking habits and they become continuously adaptive, and always building to understand and reach their "peak performance".

Objective : (iv) : To understand the application areas of neuroplasticity in leadership development

Using Neuroplasticity to overcome procrastination: An individual leader's greatest weakness might be anything from a difficulty strategising, to trouble empathising, to frequent procrastination. Whatever it is, the first step towards overcoming it is **recognising that it can be overcome**, Hansen says. "Just knowing that we're not stuck with the thinking and emotional habits that may be hindering us is the first thing," Hansen says. "All we need to know is that these traits are extremely developable and we just need some tools to be able to develop them." Once a desired change has been identified, a **goal-setting process** should be followed. In addition to "SMART" goals, which promote logical thinking but don't necessarily engage the whole brain, Hansen uses "SAFE" goals. "It stands for: see it, accept it, feel it and express it. Basically it means: get the right side of the brain involved through imagination, through visualisation through emotion." Questions such as, "How are you going to feel when you achieve that goal?" and, "What sorts of feelings do you *want* to be experiencing?" can help to promote "whole-brain thinking" while goal-setting, she says. Next comes the "**attention-density**" stage. "Changes in the brain occur from both the quality and quantity of attention that is paid to the change," Hansen says. "If, for example, if the goal is to improve big-picture thinking, paying attention to big-picture thinking quality and quantity and paying attention to it regularly. It can be *paying attention to the goal* at least three times a day with some deeper thinking. Allowing the power of subconscious processing to contribute to goal attainment etc will lead to positive outcome.**Neuroplasticity and rewiring the thinking:** Leaders can also re-wire their thinking. Drawing on the work of Dr Jeffrey Schwartz - a neuroplasticity expert and the author of the recently-published book *You are not your brain* - Hansen explains that many of our negative thought habits are actually "deceptive brain messages". "One of the key things in learning self-directed neuroplasticity, is that not everything your brain communicates is helpful in achieving

your goals." Some are deceptive brain messages that have become "hard-wired", and "seem concrete and real". "If we repeatedly think, 'I'm not creative' or 'I really need a drink to de-stress', or 'I can't manage under pressure', those actual sentences can become hard-wired. "You cannot change or deconstruct existing wiring. Leaders awareness of cognitive science can make them to lead and influence mindful change: do organizational transformation by taking into account the physiological nature of the brain, and the ways in which it predisposes people to resist some forms of leadership and accept others. There is a great deal of art and craft in it. But several conclusions about organizational change can be drawn that make the art and craft far more effective. These conclusions would have been considered counterintuitive or downright wrong only a few years ago.

Change is pain. Organizational change is unexpectedly difficult because it provokes sensations of physiological discomfort. **Behaviorism doesn't work.** Change efforts based on incentive and threat (the carrot and the stick) rarely succeed in the long run. **Humanism is overrated.** In practice, the conventional empathic approach of connection and persuasion doesn't sufficiently engage people. **Focus is power.** The act of paying attention creates chemical and physical changes in the brain. **Expectation shapes reality.** People's preconceptions have a significant impact on what they perceive. **Attention density shapes identity.** Repeated, purposeful, and focused attention can lead to long-lasting personal evolution. Why Leaders feel the pain to change: Working memory fatigues easily and can hold only a limited amount of information "on line" at any one time. Therefore, any activity conducted repetitively (to the point of becoming a habit) will tend to get pushed down into the basal ganglia, the habit-center part of the brain. This frees up the processing resources of the prefrontal cortex. After just a few months of learning to drive a car, people can typically drive "without thinking." If they then try to drive on the other side of the road, say in another country, the act of driving suddenly becomes much more difficult. The prefrontal cortex must now be used to keep track of the action. Many travelers never want to undergo this experience. Similarly, for those used to an automatic transmission, the first time driving a car with a standard transmission can be a nerve-wracking experience. (Indeed, the basal ganglia area operates like an automatic transmission, shifting among patterns of deeply held thought.) The same cognitive dynamics come into play when people face other types of stressful experiences, including any strategic or organizational change. Much of what

managers do in the workplace — how they sell ideas, run meetings, manage others, and communicate — is so well routinized that the basal ganglia are running the show. Trying to change any hardwired habit requires a lot of effort, in the form of attention. This often leads to a feeling that many people find uncomfortable. So they do what they can to avoid change. Evidence from both clinical research and workplace observation change efforts based on typical incentives and threats (the carrot and the stick) rarely succeed in the long run. For example, when people routinely come late to meetings, a manager may reprimand them. This may chasten latecomers in the short run, but it also draws their attention away from work and back to the problems that led to lateness in the first place. Another manager might choose to reward people who show up on time with public recognition or better assignments; for those who are late, this too raises anxiety and reinforces the neural patterns associated with the habitual problem. Yet despite all the evidence that it doesn't work, the behaviorist model is still the dominant paradigm in many organizations. The carrot and stick are alive and well.

Humanism Is Overrated

called the person-centered approach, the field was inspired by such thinkers as Carl Rogers and Abraham Maslow. This school of thought assumed that self-esteem, emotional needs, and values could provide leverage for changing behavior. The prevailing model of humanist psychology involved helping people reach their potential through self-actualization — bringing forth hidden capacities and aspirations. When someone tries to politely tell people what they are doing wrong and phrases the criticism as a question (even one as seemingly innocuous as, “What made you think that solution would work?”), subconscious alarm bells ring. People can detect the difference between authentic inquiry and an effort to persuade them. Neither the behaviorist perspective nor the person-centered approach is sophisticated enough to provide a reliable method for producing lasting behavior change in intelligent, high-functioning workers, even when it's in their own interest to change. It's time we looked elsewhere.

Focus Is Power

Some of the biggest leaps in science and industry have emerged from the integration of separate fields. When the study of electricity and of magnetism coalesced to become the science of electromagnetism, the field gave us the electric motor and generator, which in turn sparked the Industrial Revolution. To understand how to better drive organizational change, we turn to another nexus, this time between neuroscience and contemporary physics. Neurons communicate with each other through a type of electrochemical signaling that is driven by the movement of ions such as sodium, potassium, and calcium. These ions travel through channels within the brain

that are, at their narrowest point, only a little more than a single ion wide. This means that the brain is a quantum environment, and is therefore subject to all the surprising laws of quantum mechanics. One of these laws is the Quantum Zeno Effect (QZE). **Expectation Shapes Reality**

Cognitive scientists are finding that people's *mental maps*, their theories, expectations, and attitudes, play a more central role in human perception than was previously understood. This can be well demonstrated by the placebo effect. Tell people they have been administered a pain-reducing agent and they experience a marked and systematic reduction in pain, despite the fact that they have received a completely inert substance, a sugar pill. One study in 2005 by Robert C. Coghill and others found that "expectations for decreased pain produce a reduction in perceived pain (28.4%) that rivals the effects of a clearly analgesic dose of morphine." Donald Price of the University of Florida has shown that the mental *expectation* of pain relief accounts for the change in pain perception. The brain's deepest pain centers show systematic changes consistent with changes in *experienced* pain. The impact of mental maps suggests that one way to start is by cultivating moments of insight. Large-scale behavior change requires a large-scale change in mental maps. This in turn requires some kind of event or experience that allows people to provoke themselves, in effect, to change their attitudes and expectations more quickly and dramatically than they normally would. **Attention Density Shapes Identity**

For insights to be useful, they need to be generated from within, not given to individuals as conclusions. This is true for several reasons. First, people will experience the adrenaline-like rush of insight only if they go through the process of making connections themselves. The moment of insight is well known to be a positive and energizing experience. This rush of energy may be central to facilitating change: **Mindful Change in Practice**

How, then, can leaders effectively change their own or other people's behavior? Start by leaving problem behaviors in the past; focus on identifying and creating new behaviors. Over time, these may shape the dominant pathways in the brain. This is achieved through a solution-focused questioning approach that facilitates self-insight, rather than through advice-giving. Let's go back to Mike, our pharmaceutical CEO. One of Mike's direct reports, Rob, has hired only three of his targeted six new team members this year. If Mike asks Rob why he didn't reach the goal, he will focus Rob's attention on the nonperformance. As a result of this attention, Rob might make new cognitive connections (also known as reasons) as to why he didn't find the new people. For example, "All the really good people are taken by other companies," or "I don't have time to do

the kind of recruiting we need.” Although these reasons that people were not hired might be true, they do little to support or foster any change.

Conclusion:

Management practices such as the open-book management approach encourage employers to practice open communication and transparency with employees to improve trust, teamwork, employee motivation, and performance. Studies evaluating the effectiveness of these methods show that they can also improve a company’s bottom line. Until recently, though, we did not understand the science behind these practices. Thanks to the field of neuroscience, technological advances in functional magnetic imaging (fMRI), and a 2013 commitment by President Obama to support a brain-mapping initiative to help us understand the workings of the brain, we are beginning to see the physical link these and other management practices have to the brain. **The Emerging Field of Neuroscience and Neuroleadership:** Leaders and HR professionals are continuously searching for better ways to engage, connect, and lead others. New advances in the field of neuroscience may help us unravel the physiology of leadership effectiveness. Neuroscience is the study of how the nervous system develops, its structure, and what it does. This field is still in its infancy, and neuroscientists admit there is more they don’t know about the brain at this time than they do know. The mapping and studies done so far, however, have shown definite neural connections in the brain that have allowed scientists to develop a deeper understanding of the interconnectedness of the brain and behavior. As professors Adam Waytz and Malia Mason wrote in a 2013 article for *Harvard Business Review*, neuroscience has already revealed insights that are applicable to the workplace, including: How to promote creative thinking; How to structure rewards; The role of emotions in decision making, and; The opportunities and (mostly) pitfalls of multi-tasking.

Neuroscience and Leadership

In the not so distant past, the conventional definition of an effective leader was one who got results, boosted the bottom line, and generally forced productivity out of his or her employees. Some of the management practices used to get these results were unfortunately at the cost of employee motivation, retention, trust, and ultimately the bottom line. With a window into neuroscience, today we have more insight into how to improve leadership behaviors.

Neuroscience research has found: A link between effective leaders and positive working relationships with others. Leaders with positive working relationships with others trigger areas in the brain associated with exciting attention, activating the social system, and other regions associated with “approach” relationships. Leaders with poor working relationships with others deactivated the social system and activated regions of the brain associated with narrowing attention, lowering compassion, and triggering negative emotions. Leadership development activities, therefore, should focus on building positive working relationships with peers and subordinates. A physical connection in the brain associated with trust, an emotion that is increasingly cited as a critical leadership trait to exhibit. The brain determines trustworthiness within milliseconds of meeting a person. That initial determination is continually updated when more information is received and processed, as the brain takes in a person’s appearance, gestures, voice tone, and the content of what is said. What this means for leaders is that it is possible to build trust among employee even if it has been lacking in the past. Gut feelings—those feelings that occur without conscious thought—are real, and this can be helpful in leadership development. Gut feelings trigger physical changes to the body like increased heart rate, sweating, blushing, and goose bumps. While gut feelings or hunches can be fallible, they can be used to help bypass complex and time-consuming analysis. Leaders can be taught to stop and consider gut feelings before making business decisions.

Neuroscience and Change Management

We now know that change is dreaded because the brain, which is hard wired to survive, perceives it as a threat. This deeper understanding of the fear of change has widespread implications for how business leaders and HR professionals approach change management. If change is presented as a crisis (“If we don’t change immediately, we’ll all be out of a job”) or if a “just do it and don’t ask questions” approach is taken, the change effort will likely fail. Leaders should try to reduce stress and anxiety by focusing on the positive aspects of the proposed change, asking questions, and listening actively to employees’ concerns. This process enhances the brain’s ability to adjust its response to the change and perceive it as non-threatening.

Neuroscience and Promoting Creative Thinking and Innovation

Neuroscience has found that there are sections of the brain tied to innovation and creativity. The innovation section allows humans to transcend, to imagine what it may be like to in a different space and time. This area is unique to humans and is most effective when it is highly engaged. When people “transcend”, the brain detaches itself from the external environment and focuses inward. It is during this time that creativity is at its peak and those “eureka” moments are most likely to occur. Another way to improve creativity is to appeal to another section of the brain. Waytz and Mason call the “control network.” The control network allows the brain to focus on the present moment so it won’t wander all the time. This network works best when it is faced with limited distractors such as email, phone calls, the Internet, and all the other daily factors that draw us away from task and increase anxiety. HR and talent management professionals can apply the knowledge gained through neuroscience to improve innovation and creativity by:

- Engaging the area of the brain associated with innovation. Establish programs that allow employees protected time to work on projects of their choice that advance the organization in some way.
- Engaging the control network to encourage focus. Establish and support “technology free” blocks of time when phones and email are turned off.

Neuroscience and Employee Engagement

Much of the same neuroscience findings that can be applied to improve leadership skills, reduce anxiety during times of change, and improve creativity and innovation can be applied to employee engagement. HR and talent management professionals can use neuroscience to help improve employee engagement by:

- Fostering a top-down approach to employee engagement. Leaders and HR professionals should encourage and educate others on how to develop positive working relationships with their peers and employees to increase employee engagement.
- Making innovation and creativity a top organizational priority to improve employee engagement. It may be time to re-evaluate open plan offices, the constant barrage of emails, 24/7 access to technology, and other practices that neuroscience has found to reduce innovation, creativity, and focus.
- Discouraging multi-tasking. Neuroscience has widespread application possibilities, from understanding the genesis and possible cures of such disorders as schizophrenia, autism, and Alzheimer’s disease to better understanding the science behind our interactions with others. By leveraging neuroscience and increasing our understanding of the

brain, we can also enhance leadership skills, change management initiatives, creativity and innovation, and employee engagement.

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