



Neuroscience and the Three Brains of Leadership

By Grant Soosalu and Marvin Oka

Abstract

Recent Neuroscience findings have uncovered that we have complex and functional neural networks - or '*brains*'- in our heart and gut, giving scientific credence to the growing body of leadership literature showing how the world's best companies are guided by leaders who can tap into the intelligence of their head, heart and guts. Combining these Neuroscience findings with behavioral modeling research conducted by the authors, a number of key insights have been found about the roles of the heart and gut brains for adaptive and generative leadership.

In the increasingly complex and volatile social and business environments that organizations operate in, leaders who are unable to tap into and harness the full intuitive and innate intelligence of their multiple brains (head, heart and gut brains aligned together) are at a distinct disadvantage. A new field of leadership development is emerging, known as mBIT (multiple brain integration techniques) and it provides organizational leaders with practical methods for aligning and integrating their head, heart and gut brains for increased levels of emergent wisdom in their decision-making, and for developing an expanded core identity as an authentic leader.

The Three Brains of Leadership – harnessing the wisdom of the head, heart and gut brains for generative and adaptive leadership

The complex issues and adaptive challenges facing organizations today require a far more generative response than simply devising innovative strategies and new business models. New strategies developed and executed from conditioned ways of being and thinking predictably end up back in status quo. What is required is a new form of leadership. Not a new approach to leadership, but a new *form*. This new form is not about a particular leadership style or ‘*type*’ of leadership. It’s about the leader themselves and their ability to emerge new levels of consciousness and wisdom in their decision-making.

Despite the abundant variety of leadership models available today, persistent issues still remain common to many organizations such as:

- Staff engagement
- Execution on strategy
- Attracting and retaining talent
- Cultivating a performance culture
- Maintaining market and community relevance
- Brand relevance and having a compelling and authentic brand story
- Delivering quality customer experience

The typical organizational response to these and other frequent issues is to call for a ‘*step change*’ in the forms of ‘*innovation*’ (in strategy product or service) or ‘*transformation*’ (business, culture or process). Otherwise the response is a call for an increase in leadership itself and a subsequent pursuit of new leadership models that hopefully happen to catch the interest of the organization’s senior managers.

While all of these responses and approaches are useful to a point, any real whole-system change that is both sustainable and wise requires leaders who are authentically connected deeply within themselves, to their staff, and to the communities they touch. In other words, this requires wise leaders who are integrated across their head, heart and gut brains; leaders who are neurologically integrated. By aligning their conscious and unconscious intuitive abilities, they are able to harness the innate wisdom of their head, heart and gut intelligences for powerful and generative decision-making.

Truly generative and adaptive leadership today requires whole new levels of self-awareness and self-facilitation for integrating head-based intellect with heart-based values and gut-based instincts. No longer can a true leader rely solely on the competencies dominated by their head alone. As the now well-validated field of Emotional Intelligence has shown, mental cognition and thinking processes alone are not sufficient for total success. And growing lists of leadership experts are weighing in saying that even IQ and EQ together don’t provide the full solution.

For example, in their popular leadership book, *'Head, Heart & Guts – How the World's Best Companies Develop Complete Leaders'*, leadership mavens David Dotlich, Peter Cairo and Stephen Rhinesmith make the case that leaders who operate only from the head are what they consider *'incomplete leaders'*. To truly thrive and lead successfully in today's complex social and business environments, *'whole leaders'* must learn to tap into the innate intelligence of their head, heart and guts.

Backing this up, in a recent TEDx presentation, Marty Linsky, co-author of several books on adaptive leadership along with Ronald Heifetz, explicitly states that *"technical leadership is from the head, and adaptive leadership is from heart and gut"*.

These sources make fascinating and intuitively obvious claims, but what exactly does all this mean?

Neuroscience and the Cardiac and Enteric 'Brains'

Over the last decade or so, the field of Neuroscience has uncovered some intriguing findings that give support to the ideas that true leaders use all of the intelligence available to them and go well beyond that of just their head brain.

Starting with his pioneering research on neuro-cardiology, Dr. J. Andrew Armour introduced the concept of a functional brain in the heart. His work revealed that the heart has a complex intrinsic neural network sufficiently sophisticated to qualify as a *'brain'* in its own right. The heart's neural network meets all the criteria specified for a brain including several types of neurons, motor neurons, sensory neurons, interneurons, neurotransmitters, proteins and support cells. Its complex and elaborate neural circuitry allows the heart brain to function independently of the head brain and it can learn, remember, feel and sense.

Following on, in 1998, Neurobiologist and M.D. Dr. Michael Gershon published his pivotal book, *'The Second Brain'*, in which he described the culmination of over a decade of research and discovery that the gut also contains a complex and fully functional neural network or *'brain'*. The gut brain, also known as the enteric brain, contains over 500 million neurons and sends and receives nerve signals throughout the chest and torso and innervates organs as diverse as the pancreas, lungs, diaphragm and liver. The gut brain is a vast chemical and neuro-hormonal warehouse and utilizes every class of neurotransmitter found in the head brain. Research has shown that the gut brain can learn, store memories and perform complex independent processing.

The significance of these findings to leadership development is profound.

Modeling the Competencies and Functions of the Heart and Gut Brains

Over the last 3 years, informed by these Neuroscience findings, we have performed behavioral modeling research on how the heart and gut brains function in the practical areas of decision-making, action-taking, intuition, relationships, health and wellbeing, and personal fulfillment. Along with this action-research, further analysis of evidence from a wide body of divergent sources has shown that the heart and gut brains are involved in representing and processing very specific forms of intelligence and intuitive functions.

These findings support commonly held notions such as trusting one's *'gut instinct'* and being *'true to your heart'*, and they also back up the assertions that whole leaders need to use not only their heads, but also the innate intelligence and wisdom of both their heart and gut. *[We have documented both the Neuroscience findings and our subsequent modeling research in our recently published book, 'mBraining'.]*

Our findings indicate that there are three core Prime Functions for each of the three neural networks, or *'brains'*:

HEART BRAIN PRIME FUNCTIONS

- EMOTING – emotional processing (e.g. anger, grief, hatred, joy, happiness etc.)
- VALUES – processing what's important to you and your priorities (and its relationship to the emotional strength of your aspirations, dreams, desires, etc.)
- RELATIONAL AFFECT – your felt connection with others (e.g. feelings of love/hate/indifference, compassion/uncaring, like/dislike, etc.)

GUT BRAIN PRIME FUNCTIONS

- CORE IDENTITY – a deep and visceral sense of core self, and determining at the deepest levels what is *'self'* versus *'not-self'*
- SELF-PRESERVATION – protection of self, safety, boundaries, hungers and aversions
- MOBILIZATION – motility, impulse for action, gutsy courage and the will to act

HEAD BRAIN PRIME FUNCTIONS

- COGNITIVE PERCEPTION – cognition, perception, pattern recognition, etc.
- THINKING – reasoning, abstraction, analysis, synthesis, meta-cognition etc.
- MAKING MEANING – semantic processing, languaging, narrative, metaphor, etc.

Clearly, each of the brains has a fundamentally different form of intelligence and has different goals operating under different criteria. In other words, the head, heart and gut have different ways of processing the world with different concerns and domains of competence.

The importance of this to you as a leader is two-fold. First, it's crucial whenever making personal or group decisions that all three intelligences are accessed and incorporated into the decision-making process. Without the head intelligence, the decision will not have been properly thought through and analyzed. Without the heart intelligence, there will not be sufficient values-driven emotional energy to care enough to act on or prioritize the decision against competing pressures. Without the gut intelligence there will not be sufficient attention to managing risks nor enough willpower to mobilize and execute the decision once challenges arise.

The second implication is to ensure you avoid using one brain to do the function of another. Each brain has its own domain of competence and by definition is not the most competent in the other Prime

Functions. This mistake can be typically seen in organizations where the head brain is used to define the corporate values that people's heart brains don't really care about, or the head brain is used to design action plans that people's gut brains don't really engage with. Numerous other examples abound in daily corporate life.

This is why we maintain that to cope with the complexity of modern day business, truly adaptive leaders need to use more than just the skills engendered in their head brains. Leaders must learn specifically how to tap into, communicate with and align their multiple brains – their head, heart and gut intelligences -- and gain the synergy and wisdom that arises from '*multiple brain leadership*'. And equally important, to also learn how to influence and align the multiple-brains of those they are leading.

The Highest Expressions of Leadership

One of the many powerful models emerging from our research work suggests that each of our brains has what is known as a '*Highest Expression*'. This is an emergent competency that expresses what it means to be truly and deeply human. It represents the highest, most optimized and adaptive class of intelligence or competency of each brain. The Highest Expressions of each brain are:

- Head brain – **Creativity**
- Heart brain – **Compassion**
- Enteric brain – **Courage**

[Note: while there may not be a single, definitive Highest Expression for each brain that is true for everyone in all contexts, we have found in our action research that the above generative set serves as a powerful foundation for consistently emerging higher orders of wisdom and ways of being.]

These Highest Expressions are accessed and activated when the leader is in an optimum state of neurological balance, or what is defined as '*autonomic coherence*' where they are neither too stressed nor too relaxed, but are in a '*flow state*'. It makes sense that unless a leader is in a neurological flow state, their perceptions of any particular issue or situation along with their subsequent decision-making must be impaired by contrast.

For instance, if the leader's autonomic nervous system is functioning in an overly sympathetic (e.g. stressed) state, their perceptions and decision-making will typically default to their reactive conditioning. Conversely, if their autonomic nervous system is functioning in an overly parasympathetic (e.g. apathetic or '*freeze response*') state, they will exhibit an inability or lack of desire to act, or at best make timid decisions.

When in an optimum state of autonomic balance, however, we have found that leaders are able to bring a higher order of consciousness to their decision-making. Additionally, they also make decisions and take actions that arise from a more authentic expression of their deepest and highest sense of self.

Creativity

As a Highest Expression, what we mean by this is not just lateral thinking or thinking outside the box. Instead, we mean the creative and collaborative process by which a leader is able to conceive of new

possibilities and new futures that emerge as an authentic expression of who they are and what's important to them. It's also about the collaborative process of manifesting these new possibilities into reality. The process of creativity requires more than just mere imagination. If nothing manifests in the physical world, then nothing can be deemed to have been created.

The head brain's Highest Expression of Creativity is also about the leader being able to continually generate entirely new lines of thinking and new perspectives that can transform their world and the world of their organizations. The import of this sense of creativity is obvious to the practical applications of adaptive and generative leadership.

Compassion

While this is not a word that is commonly used in business parlance, it is indeed commonly used by almost all wisdom traditions whenever describing the higher qualities of human consciousness and of the very nature of being human. Within the context of adaptive and generative leadership, it's essential to remain cognizant of the obvious fact that leaders are humans, and that the people they lead are also humans. Subsequently, compassion does in fact play a significant role for authentic leaders who lead not because they have positional power, but instead lead because they feel a connection with the people and the communities they serve.

True leaders are emotionally connected to their staff, their customers and the communities in which their organization impacts. In other words, they care. And being values-driven, they care enough that if the current human condition is not satisfactory then their sense of compassion for those affected causes them to step up as leaders and take action to improve that situation. Compassion encompasses a conscious intention for helping people experience and benefit from a better way of doing things and a better way of being. The heart brain's Highest Expression of Compassion is an active expression of true leadership that connects with, values, relates to and responds to human needs and the human condition.

Courage

By definition, leaders lead. They take us to new places and new futures that are different and better than our current set of conditions. They create, invoke and stimulate change to the status quo, and this takes courage. A leader who does not have courage is no leader. Without courage, someone with the opportunity to lead will quickly back down and capitulate at the first sign of resistance or challenge. Without courage, a true leader is not able to act upon their visions, dreams and goals. They are not able to live a deeply authentic life due to fear of things unknown, uncertain, or unfamiliar. Without courage, change from the status quo would either be impossible or occur only by accident or luck.

In contrast, with courage a leader's gut brain is able to express their deepest sense of self by empowering them to act in ways that are true to what's important to them and who they really are as leaders. With courage, the leader's gut brain is able to empower them to act from their deepest sense of identity in spite of any fear-based conditioned reactions.

Organizational Evidence

There is a growing body of evidence in the Organizational Leadership literature, along with backup from the Neuroscience of Leadership research, that competencies such as Compassion, Creativity and Courage are vital for organizational success. For example, a recent study by Christina Boedker from the Australian School of Business of more than 5600 people across 77 organizations, found that the single greatest influence on profitability and productivity was the ability of a leader to be compassionate. As Boedker observed, *“It’s about valuing people and being receptive and responsive”*, and finding ways *“to create the right support mechanisms to allow people to be as good as they can be.”*

It’s important to note that compassion is not about pity, sympathy or niceness. It’s about deeply supporting and nurturing people to be the best they can be; to guide and coach them to bring the most calmness, creativity and courage to solving their issues and to flourishing within their organizational environment. As Geoff Aigner, director of Social Leadership Australia maintains in his thought-provoking book, *‘Leadership Beyond Good Intentions: What It Takes To Really Make a Difference’*, good management is ultimately an act of compassion, and requires leaders to take responsibility for the growth and development of others.

But as Aigner also points out, and this is backed up by the work of Dotlich, Cairo and Rhinesmith, along with many others, *“taking responsibility for organizational systems and the people in them can be overwhelming, tiring or frightening.”* And this is where Courage as a highest expression kicks in. Through engendering courage in themselves, as well as in the people they are leading, adaptive and generative leaders can push through the barriers to organizational change. Organizations require creativity and innovation to adapt to rapidly changing environments, and the change engendered by this often leads to cognitive dissonance and push back by the people impacted by the new paradigms the leader is emerging.

A focus on compassionate leadership and sponsorship within the organization allows people to feel valued, validated and supported, making them more amenable to supporting the creative evolution of the organization. Aligning this with courage, enables people to cope with the fears and uncertainties and to make the most of emerging opportunities that together with their leader the organization is creating.

The Generative Power of Sequence

Another key finding from our behavioral modeling research is the importance of sequence whenever aligning and harnessing the wisdom of your three brains. The order in which each of your brains is accessed makes a significant difference to how they work together and the wisdom that does or doesn’t emerge. This makes sense when you consider the fact that each are separate neural networks with different Prime Functions. It therefore makes a difference if the head is influencing the heart or the heart is influencing the head, or if the gut is leading the head or if the head is directing the gut (along with any of the numerous combinations between the three brains). In other words, it makes a difference if your thoughts are influencing your feelings or if your feelings are influencing your thoughts, or if your

gut reactions shape your perceptions and thinking versus your thought processes triggering your gut reactions.

Of the multiple combinations that are possible between the three brains, we have found there is a particular sequence that is more '*neurologically friendly*' than others and seems to be the most generative in its results. Not surprisingly, we have also found that particular sequence to be the natural order in which many widely admired role models of leadership intuitively do, ranging from socio-political leaders like Nelson Mandela to commercial entrepreneurs like Richard Branson.

This organic sequence is what we call the '*Foundational Sequence*' and as a general rule (other than for specifically contextualized situations) can be used for the purposes of leadership development, diagnosis, and praxis. It can be used for developmental purposes in leadership trainings and coaching, it can be used to diagnose the quality of consciousness in play by any particular leader at any point in time, and it can be used by leaders as a real-time personal strategy to utilize and embody.

The Foundational Sequence starts with the heart intelligence. From a leadership perspective, engaging the Prime Functions of your heart brain ensures you start with a felt connection to the people you lead and the communities you serve. This felt connection arises from a values-based connection within yourself and generates strong emotional energy and a desire to respond to human issues in meaningful ways.

The Foundational Sequence then moves from the heart to the head brain. The connected and values-based emotional states from the heart influence and shape the head brain's thoughts, perceptions and interpretations. This influence of the heart on the head is essential for authentic leadership. The perspective of a compassionate heart provides the emotional fuel and desire to make things better for others, for yourself, for your organization and for the world. This directionalizes the creative perspective of the head brain to synthesize all available information into a larger pattern for a new way of seeing and understanding the situation or issue. In a manner of speaking, this is the '*heart*' of a true visioning process that is meaningful and inspiring.

The Foundational Sequence continues as these new insights and understandings from the head are emotionally reinforced and supported by the heart brain by giving them high value and salience. The combined signals of the heart and head neural networks then connect with the gut brain which then assimilates them into the leader's identity and mobilizes them into action. As these actions are values-driven, the leader's identity is greatly expanded and evolved through this action-taking.

The Foundational Sequence finishes back at the heart brain to ensure the underlying values and human connection remains the anchor point across time as the leader takes ongoing action in the world.

In short, the Foundational Sequence that we have found produces the most generative change is: 1) start with the heart, 2) move to the head, 3) move back to the heart, 4) move down to the gut, 5) finally, move back to the heart.

Generative Wisdom and Generative Leadership

Adaptive and generative leadership requires integration across all three brains to bring the greatest possible intelligence to bear in the organization. It also requires the multiple brains be aligned through their Highest Expressions so that generative wisdom emerges in the leader's actions, decisions and ways of being.

Generative wisdom is wisdom that is enacted; it is wisdom that is inculcated and behaviorally practiced in the way the leader lives their life. And for wisdom to be generative it needs to be creative, compassionate and courageous.

Generative wisdom is a wisdom that is holistic and transformational. It continually transforms who you are, how you see the world and how you relate to it. In essence, generative wisdom is about continually emerging your highest sense of self through the pragmatics of daily living. And for leaders, this includes the way you are leading your organization, your industry, and the wider communities you impact.

Summary: mBIT (multiple Brain Integration Techniques) and Leadership

The latest findings in Neuroscience show we have three functioning brains in our head, heart and gut respectively. Using these findings as the basis for further behavioral modeling research, we have discovered patterns of competencies that are foundational to adaptive and generative leadership. We have also developed a body of techniques and processes for aligning and harnessing the wisdom of the three brains which we call '*multiple brain integration techniques*', or mBIT for short.

mBIT provides leaders with a range of simple and pragmatic tools and methods for engaging and developing the head, heart and gut intelligences of every individual and team within an organization.

There are obvious and immediate applications of mBIT to organizational decision making, talent development, relationship building, coaching, and the full range of people skills that make a leader truly great. The best companies develop '*complete*' leaders, and with mBIT, those leaders are able to tap into and harness the intuitive intelligence of their multiple brains to know how to wisely guide and evolve their people, their relationships, their decisions and their organizational worlds.

As Dotlich, Cairo and Rhinesmith point out, great leaders turn out to be those who are deeply in touch with their head, heart and guts. Even more so, it is our view that some of the greatest gains to organizational success come from harnessing the intuitive wisdom of both leaders and those they lead, so that organizations can truly evolve and adapt with generative wisdom within our complex and rapidly changing world.

[More information about mBIT can found in the book '*mBraining – using your multiple brains to do cool stuff*' by Marvin Oka and Grant Soosalu. Also, you can visit www.mBraining.com]

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Grant Soosalu is an experienced Leadership Consultant and Executive Coach with extensive backgrounds in Business Development and Project Management. He has advanced degrees and certifications in Psychology, Positive Psychology, Applied Physics, Computer Engineering and System Development. He is a qualified Total Quality Management (TQM) Trainer, and has achieved Master Practitioner Certification in the behavioral sciences of Neuro Linguistic Programming (NLP) and Advanced Behavioral Modeling. More recently Grant was awarded a Graduate Coaching Diploma in the newly emerging field of Authentic Happiness Coaching.

Grant has wide ranging expertise and experience in the educational sector as a Lecturer, Coach, Training Developer and Facilitator. Grant is a Consultant Lecturer at a leading Australian University where he runs workshops and programs on Social Media Marketing and the applications of Positive Psychology to Conflict Resolution, Risk Management and Organizational Change. Grant provides coaching and mentoring to numerous CEO's and Senior Executives.

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Marvin Oka is a highly sought after international consultant and speaker specializing in business and management applications of leading edge 'behavioral change' technologies and research. Recognized as a world leader and authority in his field, Marvin has built an impressive track record over the last 26 years helping organizations with strategic, systemic and cultural change within dynamically complex business environments. Marvin's clients range from private enterprises to government agencies throughout Australia, New Zealand, Southeast Asia, North America, Europe and the Middle East.

Marvin's consulting abilities are unique in that he is the only Behavioral Modeling practitioner in his field specializing in the areas of leadership, organizational culture shaping, leadership communications, strategic thinking, and systemic change. Marvin's consulting work involves the facilitation of strategic conversation and strategy development, leadership team development, executive coaching, organizational culture shaping, leadership communications, organizational development and behavioral modeling projects.

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