



University of Pennsylvania  
**ScholarlyCommons**

---

Master of Philosophy in Organizational  
Dynamics Theses

Organizational Dynamics Programs

---

6-4-2018

## Rethinking Intuition: Using the Framework of an Integrative-Brain Assessment for Optimal Decision-Making

Richard LeBoon

*University of Pennsylvania*, [richard@richardleboon.com](mailto:richard@richardleboon.com)

Follow this and additional works at: [https://repository.upenn.edu/od\\_theses\\_mp](https://repository.upenn.edu/od_theses_mp)



Part of the [Organization Development Commons](#)

---

LeBoon, Richard, "Rethinking Intuition: Using the Framework of an Integrative-Brain Assessment for Optimal Decision-Making" (2018). *Master of Philosophy in Organizational Dynamics Theses*. 13.  
[https://repository.upenn.edu/od\\_theses\\_mp/13](https://repository.upenn.edu/od_theses_mp/13)

Submitted to the Program of Organizational Dynamics, College of Liberal and Professional Studies, in the School of Arts and Sciences in Partial Fulfillment of the Requirements for the Degree of Master of Philosophy in Organizational Dynamics at the University of Pennsylvania  
Advisor: Amrita V. Subramanian

This paper is posted at ScholarlyCommons. [https://repository.upenn.edu/od\\_theses\\_mp/13](https://repository.upenn.edu/od_theses_mp/13)  
For more information, please contact [repository@pobox.upenn.edu](mailto:repository@pobox.upenn.edu).

---

# Rethinking Intuition: Using the Framework of an Integrative-Brain Assessment for Optimal Decision-Making

## Abstract

The purpose of this capstone is to challenge the coaching community to rethink intuition as a form of intelligence, and that when applied to the coaching process can be of greater help to coaching clients within the context of decision-making. This capstone introduces the design and test pilot of an "Integrative-Brain Assessment" that uses a novel somatically-informed, neuroscience-based framework to help coaching clients engage their whole-brain for an optimal decision-making process. This assessment enables the coaching client's 'Intuitive Intelligence' to absorb, synthesize, and integrate the elements of their problem or challenge so that a solution seems to pop into their head without any conscious effort on their part. The more the coaching client lets go and allows this organic process to work, the stronger their 'Intuitive Intelligence' becomes.

## Keywords

intuition, neuroscience, coaching, intuitive intelligence, head-brain, heart-brain, gut-brain, unconscious

## Disciplines

Organization Development

## Comments

Submitted to the Program of Organizational Dynamics, College of Liberal and Professional Studies, in the School of Arts and Sciences in Partial Fulfillment of the Requirements for the Degree of Master of Philosophy in Organizational Dynamics at the University of Pennsylvania

Advisor: Amrita V. Subramanian

Running head: RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

RETHINKING INTUITION:  
USING THE FRAMEWORK OF AN  
INTEGRATIVE-BRAIN ASSESSMENT  
FOR OPTIMAL DECISION-MAKING

by

Richard D. LeBoon

Submitted to the Program of Organizational Dynamics,  
College of Liberal and Professional Studies, in the School of Arts and Sciences  
in Partial Fulfillment of the Requirements for the Degree of  
Master of Philosophy in Organizational Dynamics at the  
University of Pennsylvania

Philadelphia, Pennsylvania

2018

RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

RETHINKING INTUITION:  
USING THE FRAMEWORK OF AN  
INTEGRATIVE-BRAIN ASSESSMENT  
FOR OPTIMAL DECISION-MAKING

Approved by:

---

Amrita V. Subramanian, MSOD, Advisor

---

Jean-Marc Choukroun, Ph.D., Reader

## RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

### ABSTRACT

The purpose of this capstone is to challenge the coaching community to rethink intuition as a form of intelligence, and that when applied to the coaching process can be of greater help to coaching clients within the context of decision-making. This capstone introduces the design and test pilot of an “Integrative-Brain Assessment” that uses a novel somatically-informed, neuroscience-based framework to help coaching clients engage their whole-brain for an optimal decision-making process. This assessment enables the coaching client’s ‘Intuitive Intelligence’ to absorb, synthesize, and integrate the elements of their problem or challenge so that a solution seems to pop into their head without any conscious effort on their part. The more the coaching client lets go and allows this organic process to work, the stronger their ‘Intuitive Intelligence’ becomes.

*Keywords: intuition, neuroscience, coaching, intuitive intelligence, head-brain, heart-brain, gut-brain, unconscious*

ACKNOWLEDGEMENTS

First and foremost, I want to give all recognition to the ‘Universal Inner Light’ that has inspired and guided me to this point of my personal and professional journey. A special thank you to my wife Sarah the dearest friend, the love of my heart and co-partner who has endured both the great successes and failures of my multiple entrepreneurial endeavors. And who now collaborates with me on my expanding coaching journey. A shout out to my son Benjamin, who brought me the awareness that what is said and done in the present shapes our future. It was the parenting-dance with Benjamin that inspired to me to test several of my coaching techniques with him. Thank you for the fun times!!!

I would like to extend my thanks to Dr. Alan Barstow, Director and Senior Scholar of the Organizational Dynamics Department. It was his initial conversation that became a catalyst to take a class outside of the OCEC cohort program while I waited until enough students could be added to start the cohort the next semester. Well as fate would have it I signed up for a class with Dr. Rodney Napier, Knowing Yourself: The Coach as an Instrument of Change. I want to thank him for the depth of insights for this class became foundational in the opportunity for me to begin to change from the inside-out. In that class there was talk amongst fellow students of being able to obtain a coaching certificate from Fielding Graduate University. Hence, I want to thank Dr. Francine Campone, Director of the Evidence Based Coaching Certificate program at Fielding Graduate University. It was her non-judgmental openness and sincere responses to my deep inquiry that helped me take the next step to become a professional certified coach.

## RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

I want to thank Dr. Charline Russo, for being an inspiring influence at UPenn, and her impactful insights on co-creative authenticity in coaching. She helped me to truly understand that the co-creative process elicits the potential of transformation to occur with the coaching client. Special thanks to Dr. Janet Greco for it was in her class that I completed the circle of my journey at UPenn. The insights and perspectives I digested in learning the concept to look through multiple frames of perspective. The learning was transformative, giving me the idea of a future coaching model – “Metaphor Coaching”.

Special thanks to professor Amrita V. Subramanian, my wonderful Capstone Advisor, for embracing my concept of rethinking intuition through the frame of coaching. I will remember the countless iterations that I shared with you in the process for completion of this capstone; and your challenge that I may be the one who needs to express what seemed esoteric (intuition) into a framework that cracked the shell and expanded the traditional view of intuition. A warm thank you for Dr. Jean-Marc Choukroun, the reader for this capstone, your input was of immense value and insight to enable me to research deeper and wider. Also thank you for the support as you were the first professor to read my paper on *The Role of Intuition in Strategic Decision-Making*.

I also want to thank myself for completing this capstone as it has become an external expression of the ‘inner messages’ that have been spoken to me over the last few years on coaching journey. Lastly, I want to give deep thanks to each of my past, present and future clients who continue to help me reflect on the craft of coaching and challenge me to keep learning new ways, approaches and techniques to offer the best service I can.

# RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

## TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
CHAPTER	
1 Introduction to Capstone Study	1
My Journey Begins	2
My ‘Aha’ Moment	2
A Practitioner’s Take	4
Personal breakthrough	5
Come Explore with Me	6
Structure of the Capstone	7
In Conclusion	8
2 Framing the Context and Path to the Research Question	10
Voices in Good Currency	10
The Conceptual Age	11
Looking Through an Expanded Frame	12
A working hypothesis	13
Field research	14
Framing intuition	15
Discovering Intuition	16
A personal frame	16
Our innate sense of intuition	16
Intuition as an Intelligence	18



## RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

	Primacy and present thought	18
	Access and applied intuitive intelligence	20
	The Intuitive Intelligence of Coaching	22
	An Alternative Path	25
	A brief study for case in point	26
	Our Three-Brains	27
	Ancient wisdom teachings	28
	Each brain plays a role	29
	Somatic argument	30
	In Conclusion	31
3	Capstone Literature Review	33
	Meta-Analysis of Literature	33
	Selection of the Literature and Method of Review	34
	Kahneman: Decision Making	35
	Intuition as heuristic technique	37
	Critique and learning	38
	Gigerenzer: The Intelligence of the Unconscious	39
	Critique and learning	41
	Damasio: Correcting the Error	41
	Critical nexus between Kahneman, Gigerenzer & Damasio	42
	Literature Review Summary	43
	Critical meta-review	44
	In Conclusion	45
4	The Integrative-Brain Assessment	46
	Working Hypothesis	46

## RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

	Disconfirming the hypothesis	47
	What is the Framework of Integrative-Brain Assessment?	48
	Utility of the Integrative-Brain Assessment	48
	Significant Interdependencies and Synergies	49
	Alex Pouget: the unconscious	49
	Integrative psychotherapy	50
	Whole-Brain Assessment Connections	51
	The Herrmann Whole-Brain Model (HBDI)	52
	The Neethling Brain Instruments (NBI)	54
	Critical review for HBDI & NBI	54
	The Myth: Left-Brain vs Right-Brain	55
	A Paradigm Shift	57
	Integrative brain & systems view	58
	The Integrative-Brain Assessment	58
	Deeper review of the assessment	59
5	Pilot Study & Lessons for the Integrative-Brain Assessment	62
	Selection of Control Group & Questions for Pilot	62
	Construct of questions and pretesting with coaching clients	62
	The “How” of Integrative-Brain Assessment Framework	63
	Client Coaching Protocols	63
	Assessment purpose	65
	A Brief Case in Point – About Alex in a Coaching Client Case	66
	Critique and Learning to Heed	68
	Research Data Gathering Process	69
	Research Data Observation	70
	The research data reveals	70

## RETHINKING INTUITION FOR OPTIMAL DECISION-MAKING

	Research Data Segmented	72
	Future Field Testing	74
	Adding an additional step	75
	Summary: Integrative-Brian Assessment Framework	76
6	Conclusion and Way Forward	78
	Listening to the Whisper	79
	Sharpening our Intuition	80
	New Way Forward	80
	A practitioner's perspective	81
	Deeper insights	84
	REFERENCES	86
	APPENDIX	104
	Illustration 1: Whole Data Set Results	104
	Illustration 2: Female Data Set Results	105
	Illustration 3: Male Data Set Results	105

## CHAPTER 1

### INTRODUCTION TO CAPSTONE STUDY

In this chapter, I share the journey that inspired and guided me to write this capstone. My journey was influenced by competencies (e.g.: knowledge, skill, and creativity) that I have gained from the Organizational Dynamics program at University of Pennsylvania and through the insights observed directly from my coaching practice.

The interaction with each coaching client brought forth an intriguing hypothesis – ‘Is intuition a myth or a decision-making tool?’

Upon reflection after each coaching session there appeared to never be perfect information that a coaching client could use to make a difficult decision. So, the default usually focused on an attempt to rely on their logical power for decision-making. This default was the typical process, plan, plot or scheme that was based as an educated guess to reach an answer by using known facts and data. There appeared to be a sense of hopeful wishing that if the coaching client had the right facts and data there surely would be a successful decision outcome. This confined frame of mind by the coaching client (as well as myself) placed all their faith in something that is all too prone to failure. Why? That’s because I observed that the coaching client appeared to ignore one of the greatest forms of intelligence – their intuition. In this capstone I aim to argue from multiple perspectives that intuition needs to be re-considered as an essential function used for optimal decision-making. Furthermore, I will back this argument with relevant research, a designed assessment tool and the existence of scholarly literature.

The key to remember is that when we tap into our unconscious domain of awareness we are experiencing our intuition in action. I propose that our intuition lies beyond the boundaries of science and analytics and as we move forward through this study we shall also examine how the world of literature on human intelligences in academia and business practice considers the term and relevance of intuition as a form of intelligence. Furthermore, I envision intuition as being the bridge that connects the wholeness of our intrapersonal, interpersonal, and transpersonal awareness (LeBoon, 2017) as I consider this journey both as a practitioner and as scholar whose journey's crescendo is reflected in pages of this capstone.

### **My Journey Begins**

My journey to write this capstone began with the influence of taking insightful and challenging classes within the Organizational Dynamics program at the University of Pennsylvania and with the comprehensive evidence-based coach certification training at Fielding Graduate University. What initially appeared to be as a tangential connection between a coaching certification and classes in organizational dynamics evolved over time. As time progressed forward my inner signal of intuition became louder and louder. The message was sensed and felt within my gut. It spoke of something I could not understand within my conscious but knew inside that there truly was a connection.

### **My 'Aha' Moment**

The book by David Dotlich, Peter Cairo and Stephen Rhinesmith titled *Head, Heart, and Guts – How the World's Best Companies Develop Complete Leaders* (2006) became the focal point of inspiration to continue my journey to write this capstone. The

authors argued in their book that to be successful in a complex, matrixed, fast-moving world, “whole” leaders must set strategy, develop trusting relationships with others, and consistently do the right thing based on personal values (Dotlich et al., 2006). Although most organizations today continue to emphasize the head over heart and guts. The idea of “whole” leaders became of great interest to me. I began to introspect that maybe an integrative coaching framework could be created from this head, heart, and guts concept. An integrative framework that could help my coaching clients make optimal decisions and achieve greater outcomes than just using a traditional cognitive psychological model.

The idea of an integrative coaching framework revealed itself further upon the research of Dr. Dan Siegel. Dr. Siegel put forth in his research that all areas of the prefrontal brain communicate rapidly with each other – assessing if we should go toward or move away from what may be in front of us. The key point is that all these prefrontal areas work together in the decision-making process. Dr. Siegel goes on to further explain that when individuals say they listened to their gut, they are really using their whole-self. Therefore, they’re not just responding to their gut sensation, but they’re using their gut to give them an ultimate summation of where they should go (Siegel, 2009). This was the ‘Aha’ moment for me as it revealed an insight of what my inner voice had been whispering for a long time that intuition does play a part in guiding our path forward.

It was enlightening for me to realize that the integration of the brain means that the separated areas within an individual’s unique functions, in the skull and the body, become linked to each other through synaptic connections that create neuron messages.

These integrated linkages enable more intricate functions to emerge – such as insight, empathy, intuition, and morality (Siegel, 2009).

### **A Practitioner's Take**

The next pivotal moment in my journey that inspired me to write this capstone sprung forth directly from the coaching of clients. The coaching process is based on using powerful questions. This led me to hypothesis by asking myself, “What if there was a way to craft a series of direct questions that could tap the intuition of the coaching client?”. Questions that could metaphorically have the ability and capability of taking a deeper dive into the inner essence of the coaching client. Helping the client to use their intuition as a resource or tool for optimal decision-making. My own intuition brought forth the sense that maybe I could design an assessment framework that would ask a series of powerful questions? An assessment framework that was able to invite the coaching client to action, clarity and discovery at a metaphorical somatic-level.

What came out of the countless iterations of my design and pilot testing with each coaching client was a framework that I name as the “Integrative-Brain Assessment”. An assessment framework that can help and guide coaching clients to not just use their analytical or emotional skills but to tap their intuition. Additionally, it is an assessment designed to metaphorically integrate the brains of the head, heart and gut into an awareness that discloses their integration for decision-making. Hence, this capstone will serve as the first structured iteration of the concept and initial pilot test as that is well within the scope of my reflection and application of the desired outcome. That again will tie into my future doctoral research to validate and refine. All begins here.

### *Personal breakthrough*

As my research journey continued the personal breakthrough finally came to light. It was the concept of the holistic nature of intuitive processing that I had connected back to the Jungian concept of “the big picture” (Anderson, 2000). Jung’s concept of the “Self”, which is the archetype of the “Center” of the psychic person, his/her totality or wholeness. The “Center” is made of the unity of conscious and unconscious of the individuation process (Jung, 1976). But it was the connection of Jung’s research on intuition which intrigued me as Jung put forth the idea that humans use metaphors and symbols, both through their conscious visualization and dreams. Jung believed that the unconscious did not have words and communicated with the conscious mind through symbols. A symbol might be an object, a word, a living being or a scene (Jung, 1976).

As I contemplated on Jung’s work I realized that the metaphorical integration of information had the appearance of being a primary feature of intuition. This was further supported by the work of Dane and Pratt (2007) as they put forth the notation that intuition comes into play in circumstances where rational analysis cannot function. Their research showed that it mostly appears when multiple streams of information need to be encoded very rapidly at an unconscious level. With additional research studies they suggest that when we make unconscious holistic associations we map stimuli onto internal conscious frameworks (Dane & Pratt 2007). Furthermore, Dane and Pratt’s research informs other research findings which have associated intuition with the ability to synthesize unconnected memory fragments with other information (Mintzberg et al., 1998). My interpretation of these findings was that our intuition has its own way of



knowing things, and it deserves to have a part in the process for optimal decision-making. My experience as a practitioner and as scholar makes me conjecture that the trusting of our intuition, even when all the information tries to lure us to the other side can be an acquired skill that manifests itself within our conscious awareness.

To supplement my personal breakthrough, it arrived from further research and introspection that most of us at some time have experienced intuitive perceptions about distant objects or future events that later turned out to be correct. In many cases, these perceptions are cognitive inferences, extrapolations based on forgotten memories of prior experience that remain idle in the consciousness (Sarbin et al., 1960). However, there are instances when so-called intuitive insights are found to be valid and related to circumstances so unique that these intuitions do not seem explicable on the grounds of prior experience. It is postulated that such intuitive perception involves connection to a field of information beyond normal conscious awareness (Loye, 1983).

This idea of a connective unconscious field being outside of oneself resonated with me as I have seen this manifest in the process of my coaching practice but was not able to measure it. Hence, in this capstone I hypothesize that intuition is the essence that bridges not just our unconsciousness of stored information but also the unconsciousness of stored information within the universal collective of us all. With field testing from the “Integrative-Brain Assessment” I seek to lend validation to my hypothesis.

### **Come Explore with Me**

I invite you to come and explore with me as a practitioner and a scholar, throughout the following chapters of this capstone as I investigate and examine a few

sides of argument to assess if intuition is a myth or a decision-making tool. This capstone aspires to serve as a preliminary pilot study on the “Integrative-Brain Assessment” as it seeks to reveal how a coaching client can engage their unconscious domain of intuition for optimal decision-making.

By using an integrative-brain approach I bring together multiple perspectives, incorporating the most essential, valid, and useful aspects into a single comprehensible framework. Furthermore, this integrative process reveals through research, observation, testing, and reflection of where the inner message within a coaching client resonates.

### **Structure of the Capstone**

The structure of the capstone moves through 6 chapters where in chapter one, I introduce the basic premise of the “Why” of the journey and how I came to be the person to write this forward-thinking topic on intuition, both as a coaching practitioner and a scholar. In chapter two, I propose framing the context and path to the research question of this capstone. This framing creates a roadmap to take a deeper dive into the prevalent views on the concept of intuition, and the context leading to the thesis in this capstone. Then in chapter three I review the central literature themes concerning intuition. With the research focused on three common threads among the many descriptions of intuition: (i) it is a phenomenon of unconscious thought; (ii) it relies heavily on experience-based knowledge that leads to expertise in a given field; and (iii) it is a comprehensive, unrestrained thought process (Bastick, 1982). In chapter four we look at my design of the “Integrative-Brain Assessment” that engages the head, heart, or gut-brains through a series of powerful questions to elicit an unconscious message from the intelligence of

intuition. Then in chapter five we will review the pilot study used and the lessons to be considered for the “Integrative-Brain Assessment. This chapter considers the integrative aspects within the capstone by looking closely at the field research data; that draws inferences pertinent to the research question whether intuition plays a direct factor in the decision-making process. In the last chapter, we complete our journey together by putting forth a call to fellow coaches that the “Integrative-Brain Assessment” has both the ability and capability to engage all three-brains (head, heart and gut) of a coaching client for optimal decision-making. And it shares insight of a veiled novel framework that revealed itself through the journey of writing the capstone. This novel coaching framework connects intuition through an integrative approach to coach clients through their intrapersonal, interpersonal, and transpersonal frames of awareness.

### **In Conclusion**

It is interesting to me that intuition cannot always be understood by logical reasoning, but it appears that it can be understood by our sense of curiosity and willingness to tap the inner-reasoning of the unknown. This tapping into the unknown manifests itself in our gut area (Mayer, 2011). I propose this is not a stance of ignorance but an in-depth quality of intention and attention. It is this capacity that which cannot be solved by the seen but can be lived into by the non-linear synchronization of our whole-being (Damasio, 2004; Ruch, 2016; Dotlich et al., 2006; Stevens, 2013; Pert 1999).

In the next chapter I frame the context and create a path that leads to the research question. The question is how are we able to effectively make decisions in the fast-paced environment we are encountering? I hypothesize that we need to embrace the use of an

“Integrative-Brain Assessment” that synthesizes our judgement-making process logically, emotionally and intuitively. Therefore, my proposed “Integrative-Brain Assessment” seeks to expand the current frame of how we look at and think of ‘Intuition’.

## CHAPTER 2

### FRAMING THE CONTEXT AND PATH TO THE RESEARCH QUESTION

The previous chapter introduced us to the overall structure of the capstone study. In this chapter I create a roadmap to defuse all the fuse about intuition. We take a deeper dive into the prevalent views on the concept of intuition, and the context leading to the thesis in this capstone. It is critical to pause and frame the argument, synthesizing the prevalent and silent (or overlooked) voices to confirm the cogency of the argument. In this chapter, I bring forth six-parts that build on each other, leading up to the relevant literature that we review in the next chapter.

“If you have made a decision that was entirely based on factual information, you have not made a decision; it was made for you by the facts.” (Elliott Jaques, 1994)

The six-parts move in a progression and observes the nature of the voices in good currency via (i) The conceptual age; (ii) Looking through an expanded frame; (iii) Discovering intuition; (iv) Intuition as an intelligence; (v) The intuitive intelligence of coaching; (vi) An alternative path; and (vii) Our three-brains. The idea of this chapter is to appreciate the nuances in our understanding, the known and the unknown implication of our usage and application of intuition.

#### **Voices in Good Currency**

There has been an apparent reluctance by researchers to label intuition as a form of intelligence, but would you think that someone who has great intuition in making-decisions, has more intelligence? As a practicing coach and a scholar, my intuition is to say yes, especially when we are talking about individuals who are already intellectually

curious, rigorous in their pursuit of knowledge, and willing to challenge their own assumptions. An example would be if we take a deep dive into a subject and put forth effort to study numerous possibilities, we are exercising intelligence and it is key to understand that it is our intuition informing us what is and what isn't important.

### **(i) The Conceptual Age**

Through my coaching practice, I continue to hear a calling out for a form of intelligence that can assist in making-decisions within the fast-paced world we interact each day. This fast-paced world we continue to transition into is what is being called the 'Conceptual Age' (Pink, 2005). The 'Conceptual Age' is time driven by the contribution of creativity, innovation and design skills that drive economic competitiveness globally (Pink, 2005). I truly have a deep sense that intuition will play the greatest of intelligences within this age, so we can use it not just for survival but to thrive in harmony with various diverse technologies and the ability to connect to nature itself.

What has been labeled as left-brain thinking in the 'Information Age', success in the 'Conceptual Age' will require not just right-brain thinking but what I consider to be an 'Integrative Way of Thinking'. An expanded way of thinking that looks through the frames of multiple perspectives, an approach that takes what has been traditionally compartmentalized toward a flow state of inner integration (LeBoon, 2017; Morgan, 2006). Hence, in this capstone I introduce an "Integrative-Brain Assessment" for coaches to use in an effective way to help their coaching clients thrive effectively in the dynamic complexity of this fast-approaching 'Conceptual Age' (Pink, 2005).

Based on the shift toward a rapidly changing world that manifests at an increased pace of information exchange, globalization and technological advancement the outcome of ambiguity, uncertainty and unforeseen situations will become more complex. It will become more difficult to make-decisions based on logical capabilities alone (Pink, 2005). As we continue to be thrust forward the need to become more adaptive, responsive and innovative are paramount more than ever before. I strongly sense there is a calling forth from the collective of humankind to embrace our intuition so that we all can assess situations quickly, develop novel solutions and elicit flexible strategies for making optimal decisions (Agor, 1986; Dijksterhuis, 2004; Huitt, 2007; Khatri, et al., 2000; Plessner, et al., 2008).

### **(ii) Looking Through an Expanded Frame**

I have a strong inner-sense that one of the core paradoxes of the world we interact with, one of rapid technical and social change, appears to be the presence of a species out of step with the rhythms of nature. No just nature external to ourselves but to the very essence of our inward nature of being. I propose as humans we have always had distinct preferences in our approaches to problem solving that reside within our intuitive nature.

Furthermore, I conjecture that in today's complex environment there is a demand for integrating that which has been compartmentalized and that which has been lost to the narrow lens of our reliance on the pursuit of numerical data for decision making. My argument is that we need an 'Intuitive Revival' that embraces ancient cultures who although they lacked volumes of numerical information to make optimal decisions used an intelligence through the wholeness of their brain. My perspective is that the over

flowing amount of data in today's environment of fast-paced change demands that we adopt an expanded framework that integrates our thinking to look through the frame of multiple-brains. This multi-brain approach I foresee will enable the flow of intuition to manifest itself as being recognized once again as the intelligence of wisdom to be used for optimal decision-making.

The use of intuitive wisdom to counter our technology-reliance society is echoed by Edward O. Wilson (2002), a two-time Pulitzer Prize winner and one of the leading biologists and philosophical thinkers of our time. In which Wilson stated that,

“We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely” (p. 294).

*A working hypothesis*

Therefore, to thrive in this fast-paced age I hypothesize that we need to embrace the use of an “Integrative-Brain Assessment” that interacts at multiple-levels but enables the awareness of intuition. Using an integrative framework, we can learn to move beyond just thinking logically and feeling emotionally and move into the capacity to sense intuitively. In this capstone I put forth the hypothesis that to expand the current frame of our data-centric and logical-driven process of decision-making we must embrace intuition. We must shift our current compartmentalized frame of perspective into an integrative frame that looks through the lens of a somatically-informed, neuroscience-based framework that metaphorically engages the whole-brain by seeking



to tap our intuition for optimal decision-making (Damasio, 2005; Govender, 2015; Ferguson, 1999; Fuller, 1973; Benziger & Sohn, 1993; Hodgkinson et al., 2006).

This expanded frame is also informed by the ancient traditions of cultures across the world that have used metaphors as a method for communication (Lakoff & Johnson, 1980). This has additional support with the Communication Theory of Clean Language developed by David Grove. Grove realized that many therapists subtly influenced what their clients said during their sessions. He noted that this was particularly true when it came to using metaphors (Grove, & Panzer, 1989).

Metaphors operate at an unconscious level and by paying attention to them, we can gain access to a deeper and embodied level of experience (Grove & Panzer, 1989). This deeper and embodied level is where I propose our intrapersonal, interpersonal, and transpersonal awareness interconnects (LeBoon, 2017; Kowald, 2017; Whitmore, 2013; Williams, 2006; Gardner, 1983, 1993; Goleman, 2005).

Furthermore, this expanded frame can be applied to the ICF Competencies that defines coaching as "partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential" (ICF, 2107). Hence, the application of using a metaphor framework enriches the coaching outcome between coach and client in that the coach is the subject matter expert at coaching (the art of language), and not necessarily the subject matter expert of the client's coaching topic.

### *Field research*

Only recently, however, has modern science developed the technology that gives us a glimpse into brain functioning, allowing us to see how these processes work. Hence,

the use of an “Integrative-Brain Assessment” in this capstone will focus on the three-brains of the head, heart and gut (Armour, 2003; Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986; Govender, 2015; Mayer, 2011). With this understanding I seek to reveal, through field research gathered from coaching client case sessions, the importance that intuition may play in support to make a more informed and optimal decision by focusing on the gut-brain (Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986; Sinclair, 2005; Klein, 2004; Matzler et al., 2007).

### *Framing intuition*

Through the course of our daily interactions both personally and professionally we must make decisions that lead to action. As the world continues to be moving faster and faster, and increasingly in its complexity, it is desirable to have access to the most effective strategies for making optimal decisions. I observe there has been a focus on making intelligent decisions with an ever-greater reliance on cognitive ability. To push back against this cognitive reliance the process of scientific exploration has uncovered the nature and function of our intuition (Hodgkinson et al., 2008).

Based on the research of Gerard Hodgkinson, Professor of Strategic Management and Behavioral Science at Warwick Business School, he has concluded that intuiting is a complex set of interrelated cognitive, affective, and somatic processes (Hodgkinson et al., 2006). The inter-dynamics of the cognitive, affective, and somatic processes sets the frame for why I have chosen to rethink the way intuition has been perceived by society. The somatic aspects of intuition have informed my intentional design of the “Integrative-Brain Assessment” to be pilot tested within this capstone. This novel “Integrative-Brain

Assessment' framework seeks to tap into the somatic messages resonating from the gut-brain. This inner message can then be used in the context of optimal decision-making.

### **(iii) Discovering Intuition**

#### *A personal frame*

The mystery that we encounter with the concept of intuition in optimal decision-making is unlike those Agatha Christie novels we might enjoy on a summer's beach. It is not about adding up all the clues until we come to the reasonable and correct conclusion like the hero detective that solves the problem and decides the butler did it!

I envision intuition as nurturing the awareness of our inner world, the outer world, and the connection between them. It is what I name as the "Magic in the Middle". It is an intangible essence that bridges the gap between our past, present and future. I see our intuition as being the s-shaped line that intertwines the 'Yin and Yang' symbol. The workings of intuition points to depth, to liberation, a kind of beauty and truth that can't be fully defined. Yet, intuition is not something we can't know – it is something we need to know. Intuition is endlessly discovered and reveals itself when needed most for decisions in our life.

Through my coaching practice I have observed that everyone's intuitive signal is unique. I propose that as we tune into this frequency the somatic-sensation of our intuitiveness illuminates deeper and stronger. Hence, as we develop the sensitivity to the unconscious awareness of this intuitive messaging through the practice of awareness, we can become a master of our intuition. Therefore, intuition is an area which deserves more

exploration and development so that access to the knowledge of how to flex and strengthen this amazing muscle is available to us all.

*Our innate sense of intuition*

As humans we come into life equipped with five basic senses – touch, hearing, taste, sight and smell. But we also possess some more mysterious senses. One such misunderstood sense is our intuition that governs our ability to arrive at spontaneous non-logical decisions (Damasio, 2005; Ammon-Wexler, 2005). The mysterious gift of intuition is put forth in the following quote by Einstein:

“The intuitive mind is a sacred gift and the rational mind is a faithful servant... We have created a society that honors the servant and has forgotten the gift” (Goodreads, 2017).

It is key to understand that intuition is not just a magical sixth sense or a paranormal process; nor does it signify either random and whimsical decision-making or the opposite of reason. Even until about a hundred years ago science wasn't even aware of the role of our unconscious, but research studies now show that only 20 percent of the brain's gray matter is dedicated to conscious thoughts, while 80 percent is dedicated to unconscious thoughts (Cholle, 2011). We often miss out on the signals the unconscious mind sends us because of what we value and focus on and the constant noise in our heads. Therefore, how could we possibly have the full capacity to make optimal decisions without being influenced by our internal non-linear unconscious information; i.e. intuition?

We often hear a lot about the supernatural aspects of intuition, but rarely are we taught how to accurately listen and sense our intuition. And so, we must ask, how do we

develop our ability to utilize our powerful decision-making machine? I hypothesis it is possible to master our intuition through the integration of conscious intention, attention and action (LeBoon, 2017).

Intuition is the complex system in our brain that acts as a bridge between our unconscious and conscious mind. It is the process of our brain that does not require extensive analytical reasoning. Our intuition also connects to our primal instinct to enhance our ability to reason. Both famed and prominent psychologists, Carl Jung and Carl Rogers argued that our intuition is one of the most powerful mechanisms of our brain, going as far as to say that it is necessary for a positive mental health to cultivate our intuition. Rogers exclaimed that to be at our optimal functioning state of living, we must trust our intuition and can express ourselves through continuous and spontaneous forms of self-expression (Rogers, 1951). Jung made great strides in the field of psychology and sociology through his extensive research into the unconscious mind. Jung concluded that those who possessed optimal mental health possessed a certain level of openness to the deeper messages coming from the unconscious mind (Jung, 1976).

#### **(iv) Intuition as an Intelligence**

##### *Primacy and present thought*

Based on my broad research there has been an apparent reluctance by scholars and researchers to label intuition as a form of intelligence. I raise the question to make us think would someone who has great intuition in making-decisions, have more intelligence or less? My intuition is to say yes, especially when we are talking about individuals who are already intellectually curious, rigorous in their pursuit of knowledge, and willing to

challenge their own assumptions. An example would be if we take a deep dive into a subject and put forth effort to study numerous possibilities, we are exercising intelligence and it is key to understand that it is our intuition telling us what is and isn't important.

From now on within this capstone the reference to intuition will refer to it as a form of intelligence. An 'Intuitive Intelligence' that empowers our ability and capability to make optimal decisions by tapping our internal and external unconscious information.

Up until a few decades ago, there wasn't much knowledge about intelligence. The understanding of intelligence focused on the ability to solve logical problems. By breaking free of the limits of logical intelligence the introduction to a broader perspective and better appreciation through the frame of intuitive intelligence can aid in our decision-making value (Carlson & Kaiser, 1999). The breaking free of traditional logical intelligence is supported by Howard Gardner, a Harvard professor, in that individuals have many other gifts and talents that aren't necessarily reflected in the traditional ideals of intelligence. His Multiple Intelligences Theory (Gardner, 1983; 1993) is an approach for understanding the many ways in which human intelligence exists. The multiple intelligences theory claims that all humans have nine intelligences, to a lesser or greater extent, and that we each have a different intelligence profile. This profile is based on our genetics and our experiences, and it makes us unique from others. Gardner's theory of multiple intelligences has created a new understanding of intelligence. It emphasizes the importance of understanding what intelligence really is (from a qualitative process) and it's forced the question in how we perceive intelligence.

Therefore, it is the qualitative process of intelligence that lends to the construct of this capstone in that decision-making is not just a logical, data-driven intelligent process but is interconnected to the intuitive intelligence of our unconscious capacity. This enables us to consider intuitive intelligence as a multidimensional system drawing upon our higher mind, and our entire lifetime of experiences stored in the unconscious and manifested somatically within the gut-brain (Mayer, 2011). It is important to understand the concept of intuitive intelligence refers to a theory of how way we make our decisions.

Furthermore, we need to also consider that intuitive intelligence, through time and deep analyzing can deal us a bad outcome by confusing us in the process. That's how we can make a wrong decision, as the head and heart-brains can influence the gut-brain. This can be understood in the following metaphor. If we compare our head-brain to a computer server. What happens if we open too many windows and try to perform a dozen tasks at once? Exactly, it collapses. The same thing happens in our head-brain when it's submitted to an overload of too much information (logical data-centric thinking) it gets bogged down. To counter this problem, I propose that we can practice the principles of intuitive intelligence, by eliciting the creation of 'an open space'. This 'open space' empowers the conscious learning to read the messages that our intuitive intelligence reveals through the somatic pathway of the gut-brain (Damasio, 2005; Mayer, 2011; Hodgkinson et al., 2006).

#### *Access and applied intuitive intelligence*

The concept of intuitive intelligence must be understood as a natural skill to everyone. There is the erroneous belief that it is a supernatural or paranormal power that

only some people can tap into or possess while others cannot. Intuition is a natural intelligence that is inherent in each one of us from the moment we are born. Also, I propose that intuitive intelligence involves the nurturing of self-awareness to gain perspective of our inner world, our outer world, and the connection between them. It is an intangible essence that bridges our intrapersonal, interpersonal, and transpersonal frames of awareness (LeBoon, 2017).

Furthermore, intuitive intelligence lies beyond the boundaries of science and analytics. It bridges the realms of reality and imagination, reason and instinct, material and spiritual dimensions of human existence. Intuitive Intelligence is non-linear, a key skill for success in the ever-changing state of the ‘Conceptual Age’ (Pink, 2005), an age driven by constant disruption and chaos (Cholle, 2011). Intuitive intelligence is an essential part of the human mind, which includes our conscious and unconscious processes – thought perception, emotion, will, memory, and imagination. Intuitive intelligence operates on whole pieces of cumulated information that resides within our unconscious. Intuitive intelligence is a processing that arrives spontaneously, beyond intellectually known information or evident thought (Ammon-Wexler, 2014). Every human has an intuitive intelligence processing system. Like any intelligence, everyone will have varying degrees of strength and refinement. Therefore, how we decide to go about this will depend on how we process information and then accordingly respond to it.

This intuitive processing of information is supported by neuroscience research confirmed in 2004 that established a fact known for millennia by ancient civilizations: the human mind is more unconscious than it is conscious (Cholle, 2011). For that matter,



engaging the unconscious within the context of coaching clients is more optimal than focusing on the conscious part of their mind. This is a paradoxical process of thought. As psychologist David G. Myer puts it: “under the surface lies a lot of intelligence above a lot of delusion” (Cholle, 2011).

#### **(v) The Intuitive Intelligence of Coaching**

This section shares what I have experienced in my coaching practice as to how intuition correlates with the competencies set out by the International Coach Federation.

The first competency that I realized used intuitive intelligence was in establishing the coaching agreement with the coaching client. This competency is defined by the ICF as the ability to understand what is required in the specific coaching interaction and to come to agreement with the prospective coaching client about the coaching process (ICF, 2017). During the initial discovery session with the coaching client I had to determine whether there was an effective match. This decision had to be made based on the limited information gained during the discovery session, and as the coach I needed to listen to the signals of my own intuitive intelligence. I then had to decide if the coaching client was compatible in terms of alignment with my style, orientation, niche and experience.

Given the relatively short-time of the discovery session much of these judgments had to take place at an unconscious level. I had to listen to what the coaching client was saying and not saying based on my direct inquiries. I began to realize that the more experience I had from the practice of coaching the more quickly and intuitively the decision came to either work or not to work with the coaching client. Another feature of establishing the coaching agreement that I observed was explaining to each coaching

client that the coaching approach I would be using and in being open to the cues of the coaching client as they shared their intuitions. In a sense I had created a process to give permission to the coaching client that they could acknowledge their intuitive intelligence as part of their skillset and mindset.

The next competency I observed intuitive intelligence being used was in establishing trust and intimacy with the coaching client (ICF, 2017). Being aware of using intuitive intelligence became significant to create an intimate relationship and having a good rapport with the coaching client to enable a natural manifestation of intuition to occur in the coaching process (Mavor, 2009; Murray, 2004). I observed that through focused attention (deep presence) with the coaching client there was an unconscious processing of subliminal intuitive signals that I picked up in the tone of voice and/or the shift of body language from the coaching client.

Another key area that I noticed intuitive intelligence being used was in the competency of coaching presence. Coaching presence being defined as the ability to be fully conscious and to create a spontaneous relationship with the coaching client (ICF, 2017). Through my coaching practice I learned that it was very important to be fully present in the moment to be able to know when to apply appropriate coaching strategies, confidently shifting perspectives and experimenting with new possibilities. The ability to perceive and access the intuitive intelligence and trust from my own inner knowing became of immense value when having to move in the moment with the coaching client (Kautz, 2003; Mavor, 2009). The trusting of my intuitive intelligence equipped me to know when to speak and when to stay silent, to identify patterns for deeper inquiry, sense

the inner somatic feelings coming from within my gut (Damasio, 2005; Bastick, 1982; Agor, 1986; Hayashi, 2001).

Connected with the previous competency of coaching presence, active listening is the ability to focus on the coaching client, and to hear the coaching client's concerns, listening between the lines, and make connections with what the client is saying or not saying (ICF, 2017). My intuitive intelligence came into play through focused listening with each coaching session. My active listening placed attention on the coaching client's tone of voice, words, pauses, pace, and avoidance certain questions (Lewicki, 1986; Lieberman, 2000). I noticed that by using active listening the ability to read non-verbal cues from the coaching client became clearer. My intuitive intelligence was being tapped to understand what was behind the coaching client's words. Not just hearing the words but listening to the meaning and somatically sensing of the words. Another key aspect of active listening was to mindfully set aside any judgment, allowing the client to express themselves freely. This enabled the inner flow of the coaching client's intuitive intelligence to express itself openly and for it to connect to my intuitive intelligence.

The direct result of active listening and coaching presence is the ability to ask questions that reveal information or help the coaching client make connections (ICF, 2017). My use of an intuitive frame resulted in the sense and feel of asking the most appropriate questions to evoke discovery and insight from the coaching client. These hunches enabled me to ask about something out of a curious feeling that had not been mentioned by the coaching client. It became clear through my coaching practice that no

matter how planned my coaching questions were outlined it was my intuitive intelligence that elicited a deeper flow of inquiry and sense of inner awareness.

The importance of intuitive intelligence viewed through the frame of the ICF Competencies becomes strikingly apparent. Even when not conscious of it in the coaching process we as coaches naturally fall back on our intuitive intelligence at every step. It appears that intuition is an intelligence that functions when and where it wants and needs to manifest itself. It became apparent to me that by embracing my intuitive intelligence there flowed an outcome of important productivity – and that by ignoring my intuitive intelligence resulted in some of my most difficult coaching sessions. Therefore, based on my coaching experience I contend that the use of intuitive intelligence is both critical and integral to be an effective coach; and it is the utilization of the ICF Competencies that fully bring this to realization. For when we as coaches listen and speak from our intuitive intelligence it is like the wind in the trees, as it may not be visible, but we can see, hear and sense its effects (Whitworth et al., 2007).

#### **(vi) An Alternative Path**

Much attention has been given to identifying the many factors that go into making intelligent decisions, including awareness of self and others, cognitive flexibility, and emotional self-regulation. I hypothesize that an alternative avenue of exploration needs to be uncovered and a functioning non-linear system of intelligence needs to be revealed. That non-linear intelligence I propose of our intuitive intelligence (Thornton, 2007; Ohmae, 1982; Smith, et al., 2004; Goldstein, 1994; Hilborn, 2001; Cholle, 2011; Dreyfus, et al., 1986; Tomasino, 2011; Behling & Eckel, 1991; Cappon, 1993; Patton, 2003). This

proposition is based on my observation that by using an “Integrative-Brain Assessment’ framework there is the creation of a pattern of movement from where the conscious and unconscious meet. This nexus is our intuitive intelligence. Therefore, to be intuitive we must also be able to describe what we are perceiving – for even the most intuitive thinker among us, if we have no language for describing the patterns, we will not be able to sufficiently utilize the benefit of our intuitive intelligence. Hence, there needs to be a language of the knowing without knowing – I have a deep sense that this language is intuitive intelligence (Claxton, 1998; Frank, et al., 2006).

This language of intuitive intelligence is echoed in the work of Paul C. Nutt, Professor Emeritus of Management Sciences in the Fisher college of Business at The Ohio State University. His research has concluded that rational decision-making strategies struggle to reach the 50% success mark (Nutt, 1999). This bounded rationality approach has become more difficult for individuals and organizations to satisfy in our ever evolving fast-paced environment and the need for a more integrative framework that engages a non-linear approach for decision-making is severally needed (Nutt, 1999).

*A brief study for case in point*

The use of a non-linear intelligence (intuition) has been confirmed in the surveyed research of 13,000 corporate business executives by Harvard researcher Jagdish Parikh, in that executives credited 80 percent of their business success to relying on their intuition in decision-making (Williams, 2012; Kuo, 1998; Simon, 1987; Burke & Miller, 1999). These results are also corroborated in another study conducted by Ashley Fields, a senior advisor to Shell Oil, concluding that among Fortune 500 companies, "intuitive

information processing strategies are most often found at the highest levels of an organization" (Woiceshyn, 2009; Sauter, 1999). This idea of intuitive intelligence being used in decision-making is expanded within the research of Alden Hayashi (2001) in that many top executives say they routinely make big decisions without relying on any logical analysis. Instead, they call upon their intuition, gut sense, hunches or inner voice – but they can't describe the process much more than that.

In response to the stated research findings above the “Integrative-Brain Assessment” put forth in this capstone will seek to test how effectively intuitive intelligence plays in the decision-making process of coaching clients. Furthermore, it will assess if there is any underlying correlation in the outcome of intuitive intelligence revealed through the neuroscientific function of the gut-brain.

### **(vii) Our Three-Brains**

This section represents the foundational structure that I have used to inform my hypothesis in the design of the “Integrative-Brain Assessment”. While research of intuition has remained primarily focused under the field of psychology and others have used the discipline of philosophy from Eastern and Western Cultures (Nisbett, 2003). I have sought to introduce an alternative path that focuses on intuitive intelligence through the frame of a somatic-informed, neuroscience-based framework; i.e. the gut (Damasio, 2005; Govender, 2015; Hodgkinson et al., 2006). It is through the frame of neuroscience that we can truly understand that by using an “Integrative-Brain Assessment” framework we can draw upon the interconnectedness of our intuitive intelligence – the entire lifetime of our stored experiences that are somatically sensed within our gut-brain (Damasio,

2005; Mayer, 2011; Herrmann, 1996; Hodgkinson et al., 2006). Additionally, an “Integrative-Brain Assessment” framework that can benefit from the rapid, subtle, contextual, and non-linear functions of intuitive decision-making (Kahneman, 2011).

I want to bring attention that our rush to understand the brain inside our skull, has clouded what has been frequently overlooked – that the brain extends throughout the entire body in multiple ways. To make the best use of the latest research on the brain and its implications for the process of optimal decision-making we must also pay attention to the extended brain of our physical body. The traditional focus of using the brain in our skulls as a prescription in the decision-making process for logical reasoning is a short-sighted approach. As it misses the importance that we possess three-brains that are the cephalic-brain (head), the cardiac-brain (heart), and the enteric-brain (gut) (Oka & Soosalu, 2012; Peckham, 2015). Each of these organs has complex neuro-networks that can store and process information, and each has the capacity for neuroplasticity (Moore, 2016; Rajvanshi, 2011).

#### *Ancient wisdom & the teachings*

This is further revealed in the many ancient wisdom teachings having put great emphasis on checking into one’s own innate intelligence, which spoke of following the wisdom of the gut (Cholle, 2011; Gordon, 2011; Reed, 2017; Buzzell, 2007). Ancient cultures attributed wisdom to the gut, even today we say, ‘I know it in my gut’. In recent years technology and neuroscience have advanced enough to prove these wisdom teachings to be correct that we have not just one, but three-brains. Each of which have separate ways of knowing, feeling and sensing (Moore, 2016; Rajvanshi, 2011).

This is further detailed in the Eastern culture that has specific terms for the concept of gut awareness called the 'hara'. When the term 'hara' is used it refers to the energetic center in the belly (gut) area. Hara is a Japanese word that means 'sea of energy'. In Chinese, the name for the hara is 'dantian', which means 'elixir field' or 'energy center'. The Sufis call it the 'kath' (Wilberg, 2003). My keen sense is that when we live from our 'Hara', we each enter a state of interconnectedness. Why? Because we're present. We are absorbed in the moment of flow that meets the needs of that moment. True presence changes our experience of the world. Instead of looking at reality through the clouds of judgment, limiting beliefs, and inhibiting stories we tell ourselves, we're able to see the world clearly, in an emotionally stable state and sense the world through the frame of our intuitive intelligence. This is echoed by Peter Wilberg, an Indian spiritual teacher, who cultivated a rich history of continuous yogic practice and the inner awareness for everyone to experience and reach their life mission of true fulfilment.

I resonate with this key concept by Peter Wilberg (2003), "The hara is also the source of our intuition. It is the clear space within the 'soul-belly' that turns it into the intuitive 'womb' of our listening. Within it, we are literally open to receive the word of others without 'pre-conception' (p. 17).

### *Each brain plays a role*

Each of our three-brains play a different and significant role in the process of optimal decision-making. The head-brain is responsible for our logic, perception, analysis and the way we make meaning of the world as we see it and how we use language to define it (Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986). The heart-brain processes what's important to us; our emotions, values,



our dreams, desires and aspirations (Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986). The gut-brain is responsible for our core identity and sense of self; who we are and are not. It represents our intuitiveness, instinct, impulse action, courage and will to act (Gershon, 1999; Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986; Robinson, 2006).

Additionally, the gut and heart-brains together operate in "parallel distributive processing" mode – a very non-rational way (Siegel, 2009). This basically means that there is no step-by-step linear process, but instead the body-brain connection does everything at once – the processing is distributed and happens in parallel. These neural thoughts make their way to the brain stem, distribute information to the hypothalamus (Siegel, 2009). Some information goes to the right anterior cingulate and right anterior insulate (where we have a representation of our body state). Those reactions then become part of our right-brain non-linear processing – the location of our intuition (Siegel, 2009). Intuitive intelligence does not involve conscious and deliberative ‘rational processing’, and intuitive intelligence is accompanied by a somatic awareness which influences decision-making choices (Damasio, 2005; Mayer, 1996; Hodgkinson et al., 2006). It is important to recognize that this somatic location lies within our gut-brain.

#### *Somatic argument*

Based on the concept these three-brains I propose that a somatic-informed, neuroscience-based framework can identify our inner-reasoning that lead us into a more optimal decision-making process (Damasio, 2005; Cholle, 2011; Hodgkinson et al., 2006). Additionally, I propose that intuitive intelligence functions like a metaphoric

cybernetic guidance system in ways that acknowledge its limitations while maximizing its potential in enhancing the decision-making process (Wiener, 1965; Clemson, 1984; Gigerenzer, 2007; Nadel, 1990). And that this cybernetic guidance system manifests itself somatically through the gut-brain (Damasio, 2005; Mayer, 2011; Hodgkinson et al., 2006). By developing our 'somatic intuition', we can hear and sense when and what our body is trying to tell us. We have little awareness to most of these messages until they show up as physical symptoms in the body. This manifestation can inform us of what path to take or not to take in our decision-making journey. Meaning the sensation, we encounter brings our consciousness to listen to the unconscious message of our intuitive intelligence. I propose that this approach holds the key to unlock the door of unconscious information to elicit an optimal decision-making outcome.

## **In Conclusion**

In this chapter I introduced a roadmap that sought to defuse all the fuse about what intuition is and it not. I revealed through six-parts that building and assimilating each layer upon the other. The six-parts progressed and observed the nature of the voices in good currency via (i) The conceptual age, (ii) Looking through an expanded frame, (iii) Discovering intuition, (iv) Intuition as an intelligence, (v) The intuitive intelligence of coaching, (vi) An alternative path, and (vii) Our three-brains.

The main observation from this chapter is to offer the premise that while research for intuition has remained primarily focused under the field of psychology and within the discipline of philosophy from Eastern and Western Cultures (Nisbett, 2003); it is the alternative path that needs to be taken. A path that expands the focus on intuitive

intelligence through the frame of a somatic-informed, neuroscience-based framework (Damasio, 2005; Govender, 2015; Hodgkinson et al., 2006). It is through this expanded frame that I have designed, and test piloted the “Integrative-Brain Assessment”. An integrative framework that seeks to tap into the somatic-messaging of the gut-brain.

In the next chapter I review the central literature themes of scholars and researchers concerning intuition. My focus is to illuminate the three common threads among the many descriptions intuition has been assigned by scholars and researchers.

## CHAPTER 3

### CAPSTONE LITERATURE REVIEW

In this chapter, I review the central literature themes concerning intuition. The research illuminates three common threads among the many descriptions of intuition: (i) it is a phenomenon of unconscious thought; (ii) it relies heavily on experience-based knowledge that leads to expertise in a given field; and (iii) it is a comprehensive, unrestrained thought process (Bastick, 1982). The selection of literature and thought leaders has been chosen to bring into sharp focus the prevalence, pertinence and relevance of intuition. I also explain these at length as to the merit, critique, and overall contribution to the thought-school of intuition. As you read the study, I share my understanding with you as (a) a scholar-practitioner considering the reigning voice in literature, and (b) looking in a multi-minded way at the concept at hand.

#### **Meta-Analysis of Literature**

In a meta-analysis of the literature on intuition I found that there have been many conceptualizations of the nature of intuition and a growing body of research suggesting that intuition has and will continue to play a significant role in the process of decision-making. Betsch (2008), for example, stated that, “There are as many definitions of intuition as people using it” (p. 3). He implies that because intuition is a faculty available to everyone, definitions will be based on subjective experience – each one unique. However, Betsch also draws attention to the multiplicity of definitions and constructions of intuition. Intuition is considered an issue of relevance for practitioners across several fields including mathematics, pedagogy, ethics, aesthetics, education (Westcott, 1968;

Fishbein, 1987), medicine and the health professions (Hobart, 1997), as well as in scientific method and discovery in a range of disciplines (Polanyi, 1964; Fishbein 1987; Dunne, 1997; Sadler-Smith, 2008; Davis-Floyd & Arvidson, 1997).

In addition to the gut-focused literature I did find additional new scientific evidence from the research of Childre and Martin which showed “that the heart sends us emotional and intuitive signals to help govern our lives” (Childre & Martin, 1999).

The remaining part of this chapter will focus on the selection of three-main researchers and scholars in the field of intuition. The purpose is to reveal the differences and commonalities of thought and perspective.

### **Selection of the Literature and Method of Review**

The criteria which I used for selecting the literature sources were the following:

- Sources would be searched from documents, web materials, etc.
- Journals and articles would be prioritized according to their coverage of research focused on intuition, unconscious, and intuitive intelligence.
- Web-based sources would be searched according to the keywords I had established, and the refereeing system for web publication which had been used (i.e. academic papers published on the web which had had peer reviews, but not personal publications by individuals with no obvious review method).

The reason for choosing Daniel Kahneman, Gerd Gigerenzer, and Antonio Damasio from amongst the myriad of scholars for this literature review on intuition is shared in the following paragraph. Using Daniel Kahneman for this literature review was based on his research that the mind uses two systems for processing information – System 1 and System 2. These systems of thinking support my perspective that our conscious and

unconscious levels of awareness interact in shaping a decision. The conscious process is calculative, while the unconscious is intuitive, and the unconscious channels thoughts along lines associated with strong feelings. The purpose of using Gerd Gigerenzer for this literature review was based on his insights and research that went a step further than many other scholars by explaining just why our gut instincts are so often right. He defined intuition as not some sort of mystical chemical reaction but a neurologically based behavior that has evolved to ensure that we respond quickly when faced with a dilemma. Finally, the use of Antonio Damasio within this literature review was informed by his “somatic marker hypothesis” (Damasio, 2005). Damasio’s view, is that gut sensations are just as important as reason when it comes to decision-making. This view of gut sensations has become one of the central foundations for the design of my “Integrative-Brain Assessment”. For it is the sensations resonating from our gut-brain (unconscious) that the assessment seeks to identify and process within the context of the conscious logical brain.

### **Kahneman: Decision Making**

With the range of theories that have been developed, refined and tested over the years, researchers of decision-making have identified two main modes of thinking among humans: intuitive and analytical. This classification of perception has enabled researchers to better understand how individuals make decisions in real world circumstances. These modes are labeled, System 1 (intuitive) and System 2 (analytical).

Nobel laureate (won for economics) Daniel Kahneman is one of many psychologists who have described a duality between System 1 cognition, which is

predominantly unconscious, automatic, heuristic and habitual, and System 2 cognition which is more effortful, reflective and deliberative (Kahneman, 2011).

Kahneman hypothesizes that intuitive thinking (System 1) is fast and automatic thinking. In this mode, thinking, impressions, associations, feelings, intentions, and preparations for action converge, complement each other and move forward effortlessly. It is variously labeled “automatic, natural, non-verbal, narrative, and experimental” thinking (Kahneman, 2011). This kind of thinking provides individuals with no sense of voluntary control. That is, the method is totally unconscious. Intuitive thinking allows individuals to multitask in a complex and often dangerous and threatening world. It allows people to do things like drive, avoid oncoming traffic, and carry on a conversation all at the same time. Intuitive thinking does not require consciously focusing on any of these tasks; instead, people simply do them (Kahneman, 2011).

Analytical thinking (System 2), on the other hand, requires conscious mental effort. The analytical nature of this mode is “slow, effortful and deliberate” (Kahneman, 2011). Analytical thinking is typically relegated to simply monitoring on-going cognitive activities and can be called upon when necessary. It is activated when “stakes are high, when we detect an obvious error or when rule-based reasoning is required” (Kahneman, 2011). Analytical thinking allows us to process information deliberately, consciously consider multiple options, debate with others, contemplate alternative perspectives, and come to logical and, ideally, thorough and effective conclusions (Kahneman, 2011).

Kahneman proposes that intuitive thinking, without further reflection, is often faulty thinking. Numerous biases are at play when we make fast decisions under

conditions of uncertainty. Paying attention to our gut is a valuable first step in reaching a decision. But according to Kahneman unless the decision involves something like picking out a puppy from a litter, we'll want to combine it with more effortful and logical deliberation of System 2 thinking with System 1 to create a complete picture.

#### *Intuition as heuristic technique*

I want to bring awareness first to the traditional focus of what has been defined as intuition. Intuition has been known as a heuristic technique; i.e. System 1 thinking. A heuristic technique (Ancient Greek: εὕρισκω, 'find' or 'discover'), often called simply a heuristic. A heuristic technique is any approach to problem solving, learning, or discovery that employs a practical method not guaranteed to be optimal or perfect, but sufficient for the immediate goals (Wikipedia, 2017).

When finding an optimal solution is impossible or impractical, a heuristic technique can be used to speed up the process of finding a satisfactory solution. Using a heuristic technique can act as a mental shortcut to bypass the cognitive processing for a decision. Examples of this method include using an educated guess, an instinctual judgment, guesstimate, stereotyping, profiling, or common sense. Heuristics can be considered pathways derived from previous experiences with similar problems. These pathways rely on using readily accessible information from the unconscious to solve a problem (Pearl, 1983).

In psychology, heuristic techniques are simple, efficient rules, learned or hard-coded by evolutionary processes, that have been proposed to explain how people make decisions, come to judgments, and solve problems typically when facing complex



problems or incomplete information. These rules work well under most circumstances, but can lead to errors or biases (Gigerenzer, 1991).

In 2002, Daniel Kahneman and Shane Frederick proposed that cognitive heuristics work by a process called attribute substitution, which happens without conscious awareness. According to their theory, when somebody makes a judgment (of a "target attribute") that is computationally complex, a rather easier calculated "heuristic attribute" is substituted. In effect, a snap judgment is made possible by the inner working of heuristics in what they identify as intuition (Kahneman & Frederick, 2002).

### *Critique and learning*

While I agree with the research on heuristics as a technique (System 1), there are a few key issues that need to be considered when looking through the frame of intuitive intelligence for optimal decision-making that I have proposed in this capstone.

- First, it should be noted that much of the research on heuristics in what is defined as intuition has focused on the identification of circumstances and conditions under which errors tend to occur and, in doing so, results in contrived artificial situations where they were likely to occur. This is a point that Gigerenzer (1991) convincingly demonstrated by showing that many biases disappear if a more natural or common-sense representation of information is presented to the decision maker.
- Secondly, Hammond (1996) pointed out that the heuristics and biases theorists, like Kahneman and Frederick, contrasted analysis with these automatic processes rather than with intuitive cognition or spontaneous

intuitions that are commonly referred to as gut feelings (Mayer, 2011). Sadler-Smith and Sparrow (2007) concur, arguing that ‘heuristics should not be considered as equivalent to intuition’ (p. 306). Although they share many features, heuristics are induced at the will of the individual, whereas intuition, as an event or outcome, that occurs spontaneously from the unconscious. Although both heuristics and intuition draw on the experience of the practitioner, intuition embraces a much wider catchment of life experiences, knowledge and skills (Damasio, 2005).

Therefore, I oppose the criticisms of intuition based solely on heuristics as being limited, misplaced and not relevant. As a result, we have been led to cease the acknowledgment of what we intuitively know that our gut-brain has an intuitive intelligence of its own.

### **Gigerenzer: The Intelligence of the Unconscious**

While the typical process, plan, plot or scheme of using an educated guess for decision-making can be helpful, some of the most complex and significant decisions in our lives are not made this way. According to Gerd Gigerenzer, director at the Max Planck Institute for Human Development and author of “Gut Feelings: The Intelligence of the Unconscious”. Gigerenzer states that, “the trick is not to amass information, but to discard it: to know intuitively what one doesn’t need to know” (Gigerenzer, 2007). The key issue here is that I strongly sense intuition might not instantly give us the right answer, but it will more swiftly steer us clear of danger and towards better options.

Gigerenzer's research has been considered a revolution in cognitive science. In that gut sensations provide us with a brilliant exploration of what makes us tick.

Gigerenzer argues that intuition is less about suddenly "knowing" the right answer and more about instinctively understanding what information is unimportant.

Gigerenzer exclaims that:

"In my scientific work, I have hunches. I can't explain always why I think a certain path is the right way, but I need to trust it and go ahead. I also have the ability to check these hunches and find out what they are about. That's the science part. Now, in private life, I rely on instinct. For instance, when I first met my wife, I didn't do computations. Nor did she" (Gigerenzer, 2007).

I resonate with this profound statement as it the somatic sensations that our brain sends to our gut. It is the essence of that gut sensation which speaks a language only known by looking within our unconscious. This inward focus requires an 'integrative awareness' that seeks to tune into this unseen signal and message. Additionally, it is not about knowing the answer but to make an inquiry to eliminate other options. I view this as the process of eliminating the messages or data that is resonating from the head and heart-brains. This process enables the gut-brain to have equal access to express itself inwardly.

The real nugget of insight from Gigerenzer's research is that his attempt to explain how we as individuals make quick decisions (System 1) and the performance of these decisions over the more formalized (System 2) process advocated by other profound researchers. It is the "gut sensations" that rely on low-complexity heuristics over difficult mathematical optimization with dozens of degrees of freedom. Gigerenzer argues that these "quick-and-dirty" processes are often better than one would first believe, and often can outperform their more complex counterparts (Gigerenzer, 1991).

According to Gigerenzer, gut sensations are produced by unconscious rules of thumb. These are, in turn, based on evolved capacities of the brain and environmental structures. Therefore, gut sensations are intuitions as experienced. They “appear quickly in our consciousness, we do not fully understand why we have them, but we are prepared to act on them” (Gigerenzer, 2007, pp. 47–48). I completely agree that not all reactive System 1 behaviors are good for us. But rather, through Gigerenzer’s experiments it is revealed that to some degree intuitions are, in fact, often quite simple and accurate.

### *Critique and learning*

I propose that the core premise resonating from Gigerenzer’s research is that a decision presented to be solved has provided a cue; this cue has given the individual access to information stored in the unconscious, and the information is what will provide the answer. Therefore, intuition is the somatic sensing, the inner recognition, and the conscious interaction with the patterns of our stored unconscious information (Simon, 1992; Hodgkinson et al., 2006).

### **Damasio: Correcting the Error**

Our brain is the most complicated machine known to humankind. Understanding how it works can help us make better decisions. I want to focus on what role our emotions play in decision-making. The great 17th-century French philosopher Descartes would have us believe reason trumps emotion when it comes to decision-making. But recent brain science has proven the brain is more complex than that.

We are, in fact, able to take in volumes of data and information without being consciously aware of it. Neuroscientist Antonio Damasio calls this the “somatic marker

hypothesis” (Damasio, 2005). In his view, “gut sensations” are just as important as reason when it comes to decision-making. Understanding the key role, they play and why we act impulsively when we do will help us with better decision-making.

It was Damasio’s research in the examination of how individuals with damage to their prefrontal cortex, specifically the orbitofrontal cortex, a small region just behind the eyes that’s linked to emotions and our understanding of reward and punishment – are affected in their ability to make decisions. He found that those with damaged orbitofrontal cortexes struggled significantly when making the simplest decisions. The profound insight here is that they were not able to use their gut sensation for inner guidance in the decision-making process. That gut sensation helps us make so many decisions in our lives it is what Damasio calls a “somatic marker” (Damasio, 2005). This is a crucial point as decisions can be made more efficiently using somatic markers rather than having to take the time to reason out every choice we make. In other words, our gut sensations are a shortcut to be used in optimal decision-making. My takeaway from this research is that our intuition does act as an intelligence; just like our cognitive intelligence. This insight informed the design of my “Integrative-Brain Assessment”.

*Critical nexus between Kahneman, Gigerenzer & Damasio*

I do agree that impulsive thinking or acting on emotions alone can be dangerous and short-sighted because it’s the default mode we often go to when making choices; i.e. a heuristic. I want to reiterate here again the importance of what Kahneman revealed in that the brain operates under two systems: System 1 and System 2, also known as fast and slow thinking. Kahneman’s System 1 and System 2 does not take away from Damasio’s

research that our gut sensations (intuition) play a vital and critical role in the ability to make optimal decisions. As we cannot just have a sensation without substance.

Furthermore, there is a nexus between the research of Gigerenzer's and Damasio's. That nexus is that a decision presented to be solved has provided a cue; and that cue has given the individual access to information stored in the unconscious, and the information is what will provide the answer. Hence, the critical point is that the cue is our intuition – it is the somatic sensing of our gut-brain that consciously interacts with the patterns of our unconscious stored information (Simon, 1992; Hodgkinson et al., 2006).

### **Literature Review Summary**

Kahneman has made a life's work of proving that fast decisions that feel intuitive are sometimes our sloppiest, and right only about half the time. His research has shown that when trying to make intuitive decisions, people tend to be overly optimistic and confident. While I concur that making critical fast decisions solely on a gut-sensation may lead to unproductive outcomes. It is not a complete picture when faced with a decision, meaning there's no need to rely on an either/or method proposed by Kahneman.

Another interesting concept from Kahneman is that:

“When people make decisions, they tend to suppress alternative interpretations” ... “We become aware only of a single solution – this is a fundamental rule in perceptual processing. All the other solutions that might have been considered by the system – and sometimes we know that alternative solutions have been considered and rejected – we do not become aware of. So, consciousness is at the level of a choice that has already been made” (Kahneman, 2011).

I agree with Kahneman in the above statement for when we become bias toward our thinking and seek to rule out other possible frames of reference we can enhance the

decision process. I propose that it is critically vital to use an integrative framework to make an informed and optimal decision. Therefore, I hypothesize in this capstone the need for a novel approach that combines an analytical, emotional and intuitive style of decision-making. That approach is my design of an “Integrative-Brain Assessment”. This assessment uses a direct coaching inquiry process to engage the intuitive intelligence resonating somatically from the gut-brain.

### *Critical meta-review*

I want to conclude here by bringing to light the important distinction between Kahneman and Gigerenzer. Gigerenzer finds two main faults with Kahneman’s System 1 and System 2 approach.

- First, System 1 is often correct when System 2 fails. This happens because System 2 is limited by working memory and many of the complex decisions we make in life go beyond what working memory can handle. So, our gut (intuitive) System 1 decisions, although we can’t articulate how we came to them, are sometimes better anyway.
- Second, Gigerenzer finds that many of the individuals who use System 1 inappropriately lack statistical knowledge and if they were taught basic techniques, they would be much better to make an informed decision.

But the reason I think there is a difference in their viewpoints is that they are each looking through a set of their own lenses. And when push comes to shove, both would admit that each side is correct. The answer is much more nuanced and complex than a single answer could provide. Sometimes, a fast System 1 biases is better than a System 2

bias. Other times, better use of deeper research, statistics, and education could mean a better System 2. Either way I propose there needs to be an integrative approach that allows the cognitive (head-brain), affective (heart-brain) and intuitive (gut-brain) intelligences to be considered as reservoirs of information for optimal decision-making.

### **In Conclusion**

In this literature review I have attempted to connect the research of Kahneman, Gigerenzer and Damasio to my argument for the thesis of this capstone – that intuition needs to be considered as an integral part of decision-making. Hence, these three scholars support and help me move my argument forward by supporting the notion that intuition has a key position of relevancy within the decision-making process.

Furthermore, this literature review lays the groundwork for the next chapter as I put forth my concept and design of my “Integrative-Brain Assessment”. This assessment seeks to enable the flow of information by having the unique space for decision-making to occur through an integrative somatic-informed, neuroscience-based process. By focusing the integrative process through the brains of the head, heart, and gut we have a greater opportunity to tap into the reservoir of our unconscious (intuitive) information.



## CHAPTER 4

### THE INTEGRATIVE-BRAIN ASSESSMENT

The literature review in the previous chapter of the three primary thinkers, their in-depth thoughts examined, contrasted, studied, and strengthened our appreciation for a nuanced stance on the theme of using intuition. In this chapter, I begin by sharing, as in prior chapters, that based on my research and insights that there are three-ways of looking at a decision: either with our head, our heart, or our gut. I'm especially interested in using an integrative-brain approach – an approach that seeks to help coaching clients establish a harmony of communication between their: head, heart, and gut-brains. Based on interaction and observation I determined that coaching clients could benefit from an integrative-brain process that allowed their cognitive, affective and intuitive intelligences to be considered as reservoirs of information for optimal decision-making results. This led me to design the “Integrative-Brain Assessment”. An integrative assessment that seeks to introduce a novel framework different from other assessments; and one that is somatically-informed and neuroscience-based.

#### **Working Hypothesis**

My hypothesis was initially informed by the neuroscience research which revealed that over time the connections we make within our brain become hard wired and self-directed neuroplasticity is expanded for further action (Schwartz & Begley, 2003; Hanson, 2009). The concept of neuroplasticity is the brain's amazing capacity to change and adapt its neural pathways. The more often these neural pathways fire, the stronger the connections will become. This idea is best encapsulated in Canadian psychologist

Donald Hebb's famous quote, "neurons that fire together wire together" (Hebb, 1949). Therefore, I have a keen sense that coaching through the head, heart and gut-brains will have interesting implications. The impact of using the "Integrative-Brain Assessment" is the potential to alter the patterns and timing of a coaching client's consciousness – meaning it can manifest self-directed neuroplasticity not just faster but to engage an innate intelligence that automatically engages the head, heart and gut-brains for optimal decision-making. My hope is that the "Integrative-Brain Assessment" can be further field tested within the scope of a Ph.D. to determine if intuitive intelligence has a direct interconnection within the head, heart and gut-brains.

*Disconfirming the hypothesis*

As reiterated prior, the specific focus of this capstone is to propose an "Integrative-Brain Assessment" that could support coaching clients to thrive and succeed in the fast-approaching Conceptual Age (Pink, 2005). The benefit of using this "Integrative-Brain Assessment" will guide coaching clients to not just think analytically or feel emotionally but to sense intuitively within the 'Conceptual Age' (Pink, 2005). Additionally, one of the core objectives of using the "Integrative-Brain Assessment" is to bring the underlying head, heart and gut structures into awareness and disclose their mode of internal and external information. I have observed that the higher-outcome of a coaching client session is to create the environment in which the intuitive intelligence of the unconscious is made conscious. This elicits an inner-shift to develop a fundamental new way of making optimal decisions based on a non-linear and multidimensional level.

## **What is the Framework of Integrative-Brain Assessment?**

I designed the “Integrative-Brain Assessment” as a working decision-making framework that seeks to engage the head, heart and gut-brains of coaching clients. The central-focus of the “Integrative-Brain Assessment” is to elicit the inner message resonating from the domain of their intuitive intelligence. It’s not yet a theory and has not gone through reliability, validity tests and peer review. I know that by presenting this as a working framework it will need further research iterations and field testing. The further research iterations and field testing will need to be conducted within the context of when I pursue my Ph.D. in coaching.

## **Utility of the Integrative-Brain Assessment**

The use of the “Integrative-Brain Assessment” can guide coaching clients to not just think analytically or feel emotionally but to sense intuitively. Additionally, one of the core objectives of the “Integrative-Brain Assessment” is to bring the underlying head, heart and gut-brains into awareness and disclose the inner message of their intuitive intelligence. For when the intuitive unconscious is made conscious, a coaching client can develop a fundamental new way of making decisions that are at a multidimensional level.

This allows the coaching client’s intuitive intelligence to absorb, synthesize, and integrate the elements of the problem so that a solution seems to pop into their head without any conscious effort on their part. The more the coaching client lets go and allows this organic process to work, the stronger it becomes.

## **Significant Interdependencies and Synergies**

In the following paragraph I want to focus on two key tools that have informed my design of the “Integrative-Brain Assessment”. Recent neuroscience research suggests that the unconscious mind has direct bearing over our decision-making process.

### *Alex Pouget: the unconscious*

The research by Alex Pouget (2008) at the University of Rochester supports my initial hypothesis that the unconscious somatically senses through our gut-brain to make the right decision (Hodgkinson et al., 2006). As our unconscious has the capability to spot subtle visual differences, according to the Alex Pouget (2008), it also has the capability to perform complex mathematical calculations without the knowledge of the conscious mind. If the unconscious has the innate ability to make right decisions while the conscious is more likely to make the wrong one, what does this imply about intuitive intelligence? I hypothesis it has a profound impact on our ability to use the information from the unconscious to elicit optimal decisions. In my interaction and observation of coaching clients, it appears easy to rationalize situations. It seems that the right-and-left brains are at constant odds. Though the contributions of the unconscious may be the right answers, they can be overruled by the over rationalization of the conscious head-brain. It is interesting to note that we may not know reality as it objectively is, but rather we ‘know’ through subjective interpretations.

To take this a step further the research outcomes of Alex Pouget (2008) have shown that individuals do indeed make optimal decisions – but only when their unconscious brain makes the choice. Pouget makes a distinction between his research

and that of Daniel Kahneman's approach. It is noteworthy that this is where the interconnection becomes critical for my capstone research and pilot study.

Kahneman's approach was to tell a subject that there was a certain percent chance that one of two choices in a test was right. This meant an individual had to consciously compute the percentages to get a right answer. On the other hand, Pouget has been demonstrating for years that certain aspects of human cognition are carried out with surprising accuracy. He has employed what he describes as a very simple unconscious-decision test. A series of dots appears on a computer screen, most of which are moving in random directions. A controlled number of these dots are purposely moving uniformly in the same direction, and the test subject simply has to say whether he believes those dots are moving to the left or right. The longer the subject watches the dots, the more evidence he accumulates and the more informed he/she becomes of the dots' motion (Pouget, 2008). This research suggests that the human brain is wired naturally to perform these types of calculations and that the unconscious brain has an active role in decisions.

### *Integrative psychotherapy*

The second tool that informed my design of the "Integrative-Brain Assessment" was Integrative Psychotherapy (Beutler et. al, 2005; Brooks-Harris, 2008). Integrative Psychotherapy embraces an attitude towards the practice of psychotherapy that affirms the inherent value of the individual. It is a unifying psychotherapy that responds appropriately and effectively to the person at the affective, behavioral, cognitive, and physiological levels of functioning, and addresses the spiritual dimension of life as well (Beutler et. al, 2005; Brooks-Harris, 2008).

The term ‘integrative’ of Integrative Psychotherapy has several meanings. It refers to the process of integrating the personality: taking disowned, unaware, or unresolved aspects of the self and making them part of a cohesive personality, reducing the use of defense mechanisms that inhibit spontaneity and limit flexibility in problem solving, health maintenance, and relating to people, and re-engaging the world with full contact. It is the process of making whole. Through integration, it becomes possible for individuals to face each moment openly and freshly without the protection of a pre-formed opinion, position, attitude, or expectation (Norcross & Goldfried, 2005).

Integrative Psychotherapy also refers to the bringing together of the affective, cognitive, behavioral, and physiological systems within an individual, with an awareness of the social and transpersonal aspects of the systems surrounding the individual. These concepts are utilized within a perspective of human development in which each phase of life presents heightened developmental tasks, need sensitivities, crises, and opportunities for new learning (Woolfe & Palmer, 2000). The objective of using an integrative psychotherapy approach is to facilitate wholeness such that the quality of the individual’s being, and functionality interacts within the space of their intrapersonal, interpersonal, and transpersonal awareness (LeBoon, 2017). This space is maximized with regard for not just their own pursuits but is guided by personal limits and external constraints.

### **Whole-Brain Assessment Connections**

Let me take the time here to examine the proposed framework and design of the “Integrative-Brain Assessment” to the whole-brain assessment models of The Herrmann Whole-Brain Model (HDBI) and The Neethling Brain Instruments (NBI). These two

instruments are not only widely utilized, but I also experienced the HDBI first hand within the Organizational Dynamics program and found the output to be thought provoking and insightful. The HDBI and NBI models suggest that thinking styles can be conceptualized as either left-brained or right-brained. In my quest to map the “integrative aspects” of the brain, it is firmly supported, as seen in the literature review, that the latest neuroscience research speaks of the continued myth of differences between left-brain and right-brain thinking. Furthermore, it’s important to pay heed to the concept and design of the proposed framework of the “Integrative-Brain Assessment” and how it brings a novel approach to the traditional whole-brain assessment models of other researchers.

### **The Herrmann Whole-Brain Model (HBDI)**

I was introduced to and tested with the HBDI in an Organizational Dynamics class at the University of Pennsylvania. During the debriefing, I was able to see how my strengths and weaknesses were identified by my thinking preferences. The HBDI model became a catalyst and influence in my design of the “Integrative-Brain Assessment”.

Ned Herrmann created a model that is a metaphorical interpretation of how we think and what are our preferred ways of knowing. He showed that by incorporating the research of Paul McLean of the Triune Brain and Roger Sperry's Left Brain/Right Brain function, he could build a model of the human brain with two paired structures, the two halves of the cerebral system and the two halves of the limbic system (Herrmann, 1996). This allowed Herrmann to differentiate between not only the more popular notions of left-right brain, but also the more sophisticated notions of cognitive/intellectual which

describes the cerebral preference, and visceral, structured and emotional which describes the limbic preference (Herrmann, 1996).

One further important concept to understanding of the Herrmann's Whole- Brain Model, is that of dominance. The evidence of human dominance shows that wherever there are two of anything in the body, one is naturally dominant over the other. Therefore, as we are right or left handed, the assumption is that we are also naturally 'footed', 'eyed', 'kidneyed', etc. Herrmann extrapolated that we can also be thought of as 'brained'. Since dominance can only occur between paired structures, the Herrmann Brain Dominance Model focuses on the Limbic and Cerebral layers of the Triune Brain (Herrmann, 1996).

Therefore, the key aspect of Herrmann's theory suggests that we have a dominant mode of thinking preference. It is rooted in our genetic makeup and affects our underlying cognitive capabilities. We respond with our strongest abilities, creating a positive feedback system that strengthens those abilities and leads to a powerful preference for one style and a discomfort for other modes.

In summary Herrmann's Whole-Brain Thinking Model allows us to assess the way we understand and transfer knowledge, retain information, reframe situations, and acquire and sustain new habits. In short, Herrmann asserts that by engaging the whole mind, we can leverage it to its fullest potential.

The HBDI is based on a 120-question assessment that seeks to define and describe an individual's thinking preferences across their whole-brain. It proposes that when we understand our thinking preferences and gain a basic understanding of thinking



styles, we can learn to ask directly for what our brain needs, recognize another's thinking preference, and flex our own thinking when needed preference (Herrmann, 1996). The design of my "Integrative-Brain Assessment" also works across the whole-brain of the individual (the head, heart and gut-brains). Like the HBDI the "Integrative-Brain Assessment" increases an individual's self-awareness and enhances their relationship to others but it differs in that it seeks to tap into the unconscious somatic domain of their intuitive intelligence (Hodgkinson et al., 2006).

### **The Neethling Brain Instruments (NBI)**

The Neethling Brain Instruments is a revolutionary battery of instruments that strive to develop whole-brain thinking in individuals. The NBI was developed after extensive international research on left-right brain functions. Kobus Neethling, building on the work of Ned Herrmann from 1982 in split-brain research, as well as Paul Torrance, determined that both the left and right brain processes could be divided into two definitive categories, resulting in effectively dividing the brain into four quadrants (Neethling, 2005).

Although an individual may have strong preferences in a certain quadrant, they may not have equally strong preferences for all the processes associated with that quadrant. In fact, they may even find that they have rather low or average preferences for some of the components of their so-called strong quadrant (Neethling, 2005).

#### *Critical review for HBDI & NBI*

The nexus between these two whole-brain models in conjunction with my proposed "Integrative-Brain Assessment" is that they allow the individual to assess the

way they understand and transfer knowledge, retain information, reframe situations, and acquire and sustain new habits. As each model asserts that by engaging the whole-brain, we can leverage it to its fullest potential. But the difference is that the “Integrative-Brain Assessment” recognizes that it’s not quite that simple. Engaging the brain without connecting to and integrating the whole-brain – intellectually, emotionally and intuitively – can easily lead the brain to get stuck inside its own frame of reference. As it stays within the head-brain and ignores the heart and gut-brains.

Therefore, where these whole-brain assessment models from Herrmann and Neethling fall short within reference to my “Integrative-Brain Assessment” is that they do not engage the intuitive intelligence of the gut-brain through a somatic interaction that seeks to bring an integrative left-brain and right-brain state of intuitive awareness (Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986; Sinclair, 2005; Klein, 2004; Matzler et al., 2007). Furthermore, the HBDI and NBI assessment models have been constructed on the research of using a two-split brain model, resulting in what I propose as a narrow frame of reference (Banich, 2004). This narrow frame eliminates the potential decisions that arise from the intuitive intelligence of the gut-brain. And the third key difference is that these models are based on a left-brain vs right-brain myth that has been perpetuated for many decades until recent neuroscience research that rejects it.

### **The Myth: Left-Brain vs Right-Brain**

The restricted frame of reference perpetuated by the traditional whole-brain assessment models have relied on is what we could identify as the prevailing “The Brain Myth”. The premise they have put forth is that some individuals are left-brained, and

other individuals are right-brained. This has been perpetuated as a very popular idea for several decades. This theory suggests that the two different sides of the brain control two different modes of thinking, and that most of us prefer one side over the other. For example, individuals might view the left cerebral hemisphere as logical, verbal and analytical, while the right is seen as emotional, creative, and intuitive. These sides have been described almost as if they are two personalities in one head (Jarrett, 2012).

So, what do the terms 'left-brain' and 'right-brain' really mean? Often, 'left-brained' is a term used to describe logical, analytical, and calculating individuals; for example, scientists, mathematicians, lawyers, accountants, and most people who work with technology are all people who could be considered left-brained. On the other hemisphere, 'right-brained' is often used to describe creative, intuitive, and emotionally-based people; for example, artists, psychologists, graphic and interior designers, song-writers, as well as art therapists. These left and right brain are both phrases used for labelling, but also are used for scientific purposes. Scientists and neuropsychologists alike have studied the two hemispheres of the brain for over five decades; with the pioneer of the study, Roger Wolcott Sperry, being given a Nobel Prize in 1981 for his work with split-brain research (Banich, 2004).

Even after learning all this information about the left and right hemispheres of the brain, we may be asking ourselves: does the opposing brain-hemisphere concept really exist? How is it possible that one side of our brain thinks in a certain way, while the other one behaves completely differently? Is it possible for one side of our brain to be dominant over the other?

Well there is new evidence that has revealed that the idea of left-brain and right-brain thinking is a myth. Christopher Wanjek at LiveScience.com writes, “Now, scientists at the University of Utah have debunked the myth with an analysis of more than 1,000 brains” (Nielsen et al., 2013). Scientists have found no evidence that individuals preferentially use their left or right brain. The preference to use one brain region more than others for certain functions, which scientists call lateralization, is indeed real, put forth by Dr. Jeff Anderson, director of the fMRI Neurosurgical Mapping Service at the University of Utah. For example, “speech emanates from the left-side of the brain for most right-handed individuals” (Wanjek, 2013; Boehm, 2012; Jarrett, 2012).

### **A Paradigm Shift**

The question we must grapple here is what does this mean for Roger Sperry’s groundbreaking work on the brain hemispheres? The natural conclusion at the end of the prior chapters and evidence points that the research is outdated. Considering the revolution of the mind and society since Sperry’s original experiment was conducted in the 1960’s, it wouldn’t be too surprising in view of the revolutionary strides in technology in brain mapping and huge burgeoning research of the application of our ability to study the brain. Considering that Sperry’s work was conducted over 50 years ago, we are not alone in agreeing that it’s time for a scientific update (Wanjek, 2013).

What scientifically, may be held true today, could be proven incorrect tomorrow (Boehm, 2012) considering new knowledge and research. Based on the myths expressed above that we each dominate the use of our left or right-brain for thinking needs to shift. Therefore, I hypothesis a new brain assessment model (under testing) that engages both

parts of the head-brain (left and right) but also interconnects the somatic synapses of the heart and gut-brains.

*Integrative brain & systems view*

The key to this propose assessment is the way the parts interact with each other, not each part by itself. Engaging the head-brain without connecting to and integrating the whole-brain of the individual – intellectually, emotionally and intuitively – can easily lead the mind to get stuck inside its own frame of reference. As a result, the “Integrative-Brain Assessment” within this capstone seeks to engage the left, right, upper and lower thinking and emotional modes of the head-brain proposed in the whole-brain models of the Herrmann Whole-Brain Model and the Neethling Brain Profile. But where these whole-brain assessment models fall short is where the “Integrative-Brain Assessment” interacts directly with the heart and gut-brains through a somatic process of direct coaching inquiry (Oka & Soosalu, 2012; Mastone, 2011; Hadhazy, 2010; Cartin & Genest, 1986; Sinclair, 2005; Klein, 2004; Matzler et al., 2007).

**The Integrative-Brain Assessment**

Once a state-of-the-art tool used exclusively by organizational leaders, coaching has since become accessible to anyone seeking more effective strategies for innovation, communication, productivity, health and happiness. Specialized coaching models have emerged to address a myriad of different contexts in every conceivable function of life.

But not every model works the same. The most reliable systems capable of producing sustainable results are those that connect to the whole-brain of the individual. Connecting to the wholeness of the individual. The “Integrative-Brain Assessment”

within this capstone engages the left, right, upper and lower thinking modes of the head and heart-brains, as well as the intuitive intelligence of the gut-brain. Additionally, the “Integrative-Brain Assessment” does not provide a complete or unquestionable interpretation of intuition for decision-making. But rather, an approach that is constructed as a multidimensional theory in alignment with Langley et al.’s (1995) conclusion that decision-making processes are partially driven by emotion, imagination, and memories crystallized into occasional insights. This perspective is also consistent with Eisenhardt and Zbaracki (1992, 1997) who stress the importance of a multidimensional approach to decision-making encompassing bounded rationality, as well as heuristics, insight, and intuition. Eisenhardt (1999) argues that by engaging our intuitive intelligence it can be very useful when we are faced with conflicting facts or inadequate information.

*Deeper review of the assessment*

The construct of this “Integrative-Brain Assessment” consists of a diverse set of information, that resonates from the head, heart and gut-brains. The information from the head-brain is where logic and reasoning are used to make decisions (Huitt, 1996; Tallon, 1997). It is mostly associated with the question of ‘what’ (e.g., what is the meaning of that information). And the heart-brain is where feelings and emotions are used in the decision-making process (Tallon, 1997; McCraty et al., 2006). It is mostly associated with the question of ‘how’ (e.g., how does one feel about this information). The gut-brain is where the information of intuition manifests itself as an inner sensation within the decision-making process (Baumeister et al., 1998; Emmons, 1986). It refers to the

connection of information that affects the action of behavior and is associated with the issue of 'why' (Kolbe, 1990).

Furthermore, to be clear, I am not arguing for the removal of cognitive thinking or affective feelings over intuitive sensing alone. Usage of intuition as a stand-alone instrument may lead to a biased wrong choice and the outcome of being led astray, so we need an integrative framework to inform our intuitive intelligence of being connected to an issue or situation. But the reverse is also true. We need to recognize, and work with the reality, that we can make decisions based on intuition through a diagnostic and somatic pattern of information. Therefore, it is long past time to appreciate, and accommodate, the significant role that intuition plays in the decision-making process.

The key to this coaching assessment is that all three-brains need to be accessed and incorporated into the decision-making process. Without the head-brain, the decision will not have been properly thought through and analyzed. Without the heart-brain, there will not be sufficient values-driven by emotional energy to care enough to prioritize the decision against competing pressures of feelings (Peckham, 2015). And without the gut-brain, there will not be enough attention to the intuitive intelligence needed to mobilize and execute the decision once challenges arise (Dotlich et al., 2006; Rowan, 1986; Ruelas, 2011).

Furthermore, this somatic-informed, neuroscience-based head, heart and gut connection serves to align the coaching client to their deeper inner purpose by an expansion of interconnected awareness. This tuning inward to the unconscious helps the coaching client embody and manifest the potential of their intention, attention and action

for a more effective decision outcome. It is imperative as coaches that we ensure the complete transmission of each inner message that resonates from a coaching client. It is my conviction that this process leads to a greater sense of contentment and harmony for the coaching client as it reflects awareness that is integrated as well as agile, fluid and open to all possibilities (LeBoon, 2017).

In the following chapter, we shall study the pilot testing and review the findings of the study with our eyes set on future research in my doctoral journey and the learnings for my capstone that will serve as a sturdy pre-work for my research.



## CHAPTER 5

### PILOT STUDY & LESSONS FOR THE INTEGRATIVE-BRAIN ASSESSMENT

This chapter takes a closer at the integrative aspects within the capstone by focusing on the areas of: (i) selection of the control group and questions used for the pilot study; (ii) the framework steps of the “Integrative-Brain Assessment”; (iii) the client coaching protocols used in the pilot study; (iv) review of a client coaching case study; (v) critique and learning to be headed from the study; (vi) the process used for gathering data gathering; (vii) observation of the research data results; (viii) the research data segmented for further review; and (ix) what further field testing could be used to test future results.

#### **(i) Selection of Control Group & Questions for Pilot**

The control group was randomly selected and based on a diverse set of twenty-one (21) participants ranging in age, position, industry and gender. I used a self-selecting process to engage potential participants through my professional coaching practice via a field coaching session (quantitative) and use of a selection of six questions (quantitative) to gain an appropriate outcome of data from each study (Appendix: Illustration 1: Whole Data Set Results).

#### *Construct of questions and pretesting with coaching clients*

The study by Harvard researcher Jagdish Parikh, that conducted a surveyed research of 13,000 corporate business, in which the executives credited 80 percent of their business success to relying on their intuition in decision-making (Williams, 2012; Kuo, 1998; Simon, 1987; Burke & Miller, 1999) was used as the benchmark to measure the findings from my field research of the “Integrative-Brain Assessment”.

The 6 questions for this study were standard for all participants. These six questions for the study were each tested through several iterations conducted through individual coaching sessions for the study. I designed the field research to be confidential to provide a safe framework that would protect the integrity of each coaching session and honor the coaching client anonymity in the data set. The data analysis was both syncretic and analytic (Silverman, 2000) to fully appreciate both the wholeness of the outcomes reached by each field test.

### **(ii) The “How” of Integrative-Brain Assessment Framework**

Important to stay with the understanding that the “Integrative-Brain Assessment” follows a sequence of steps that has the coaching client inquire through the interconnected brains of their head, heart and gut. This allows the processing of information to filter within the frame of their multiple-intelligences and therefore expands the potentiality for a greater decision-making process and optimal outcome. Furthermore, the “Integrative-Brain Assessment” works beyond an ‘either-or’ level of decision-making and towards an ‘integrative paradigm’, where optimal decision-making arises from the interconnectedness of the coaching client’s cognitive, affective and intuitive intelligences.

### **(iii) Client Coaching Protocols**

The initial foundation of the “Integrative-Brain Assessment” is to (i) set the right frame-of-mind with the coaching client; (ii) this is critical prior to taking the coaching client through the “Integrative-Brain Assessment”. For the right frame-of-mind in answering the series of questions needs to be explained so that coaching client

understands the protocol to inwardly engage their head, heart and gut domains; (iii) have the coaching client notice where in their body does the question resonate – meaning what sensation might encounter like a light bulb being lit, a tightening, or an energetic activation. The key is to track with the assessment whether the coaching client is allowing the somatic sensing of their intuitive intelligence to manifest from within their gut-brain (Pert, 1997; Hodgkinson et al., 2006).

*Step 1:* This initial step uses an inward-focused assessment process to create a scorecard based on a series of direct coaching questions to be answered by the coaching client. This step is focused on determining from which domain (head, heart or gut) is the coaching client potentially able to answer for their proposed decision. The coaching client will answer the questions based on a scale of 1 as Lowest and 5 as Strongest in the sequence listed in the following format:

Integrative-Brain Assessment Questions	Coaching Client
1. Is the decision important to you and do you really want to reach it?	
· What does your head think about this statement?	
· What does your heart feel about this statement?	
· What does your gut sense about this statement?	
2. Do you believe it's possible to reach this decision?	
· What does your head think about this statement?	
· What does your heart feel about this statement?	
· What does your gut sense about this statement?	
3. Are you capable of reaching this decision?	
· What does your head think about this statement?	
· What does your heart feel about this statement?	
· What does your gut sense about this statement?	

4. Why do you believe that you deserve to reach this decision?	
· What does your head think about this statement?	
· What does your heart feel about this statement?	
· What does your gut sense about this statement?	
5. If you would know the decision outcome, what domain would it?	
· What does your head think about this statement?	
· What does your heart feel about this statement?	
· What does your gut sense about this statement?	
6. Where do you have the strongest impulse to act for this decision?	
· What does your head think about this statement?	
· What does your heart feel about this statement?	
· What does your gut sense about this statement?	

*Step 2:* Calculate the numbers based on the answers provided by the coaching client. If the coaching client scored a 5 on Question 6: “Where do you have the strongest impulse to act for this decision?”, this is the apparent clear brain-domain (head, heart or gut) to move forward with. This would mean that the client’s dominant brain-domain is resonating clearly for them to use in making their decision. Most of the time, however, as the coach you will find that the client scored each domain differently than the other domains for each question. If this is the case, calculate the numbers from each brain-domain that the coaching client has scored to determine which one has the higher score.

#### *Assessment purpose*

The purpose of the “Integrative-Brain Assessment” is to determine whether the coaching client is allowing the somatic sensing of their intuitive intelligence to manifest from within their gut-brain (Pert, 1997; Hodgkinson et al., 2006). While all assessment

tools on the marketplace produce responses and use approaches that are useful to a point, the use of a holistic-assessment needs to integrate the inter-dynamics of: how we think, feel and sense ourselves, engage with others, and identify our place in the universe. I hypothesize that the integration of our head, heart and gut-brains elicit our awareness to emerge from an external space of not knowing toward an ‘Aha’ insight of knowing. Hence, the purpose of the “Integrative-Brain Assessment” is to help coaching clients integrate across their head, heart and gut-brains by aligning their conscious knowledge with their unconscious abilities. This framework enables coaching clients to harness the information across their head, heart and gut intelligences for powerful and generative decision-making ability.

By having coaching clients use the “Integrative-Brain Assessment”, I hope that the outcome will be truly generative and adaptive in the Conceptual Age (Pink, 2005). For this coming age will require the use of an expanded level of self-awareness, self-facilitation, and situational-awareness that integrates our head-based intellect with our heart-based values, and our gut-based intuition. I propose that we can no longer rely solely on the competencies dominated by our head-brain alone. We need an integrative framework that combines our cognitive, emotional and intuitive intelligences for complete success. That framework is the “Integrative-Brain Assessment”.

#### **(iv) A Brief Case in Point – About Alex in a Coaching Client Case**

The following is a coaching client in the case who will be addressed as Alex. Alex had been residing mostly in his head, stuck inside a left-brain dominate perspective. His focus was trained on the development of his exceptional gifts related to logic,

analysis, and strategy, but my observation is that he had become stuck in his head-brain. By discovering his latent abilities through a creative integrative-brain process in our coaching sessions, he was able to tap into his gut-brain as well. From there, he was able to gain a clearer understanding of his situation while connecting to what mattered most. The answer that resonated from within his unconscious – his intuitive reservoir of data.

We collaborated on the following steps to check in with the Alex’s head, heart and gut-brains and rate how strongly each domain resonated in its relation to the direct questions listed. Alex had been determining if he should make a career move with a new company he has been interviewing with. His head-domain of logic kept him questioning his decision as he sensed something just did not fit logically.

*Step 1:* The assessment number scale is 1 as lowest and 5 as strongest.

Integrative-Brain Assessment Questions	Client - Alex
1. Is the decision important to you and do you really want to reach it?	
· What does your head think about this statement?	1
· What does your heart feel about this statement?	2
· What does your gut sense about this statement?	4
2. Do you believe it’s possible to reach this decision?	
· What does your head think about this statement?	3
· What does your heart feel about this statement?	1
· What does your gut sense about this statement?	3
3. Are you capable of reaching this decision?	
· What does your head think about this statement?	3
· What does your heart feel about this statement?	2
· What does your gut sense about this statement?	4

4. Why do you believe that you deserve to reach this decision?	
· What does your head think about this statement?	3
· What does your heart feel about this statement?	1
· What does your gut sense about this statement?	4
5. If you would know the decision outcome, what domain would it?	
· What does your head think about this statement?	4
· What does your heart feel about this statement?	1
· What does your gut sense about this statement?	2
6. Where do you have the strongest impulse to act for this decision?	
· What does your head think about this statement?	1
· What does your heart feel about this statement?	1
· What does your gut sense about this statement?	4

*Step 2:* Calculation of the numbers from each domain: Head-Brain: 15, Heart-Brain: 8 and the Gut-Brain: 21. What this assessment reveals in the example of Alex is that he has a strong left-brain preference to make decisions through his head-brain, but it was his gut-brain that clearly has the capability to guide Alex in this specific decision.

#### **(v) Critique and Learning to Heed**

In this section, for the example presented in Alex's choices, we will look at my initial hypothesis that our intuitive intelligence plays a direct factor in the decision-making process. This initial hypothesis was informed by the surveyed research of 13,000 corporate business executives conducted by Harvard researcher Jagdish Parikh, in which executives credited 80 percent of their business success to relying on their intuition in decision-making (Williams, 2012; Kuo, 1998; Simon, 1987; Burke & Miller, 1999). With additional corroboration drawn from the study conducted by Ashley Fields, a senior advisor to Shell Oil, concluding that among Fortune 500 companies, "intuitive

information processing strategies are most often found at the highest levels of an organization" (Woiceshyn, 2009; Sauter, 1999). And further backed by the research of Alden Hayashi (2001) in that many top executives say they routinely make big decisions without relying on any logical analysis. Instead, they call upon their intuition, gut sense, hunches, or inner voice – but they can't describe the process much more than that.

An initial observation from the research data set results generated from field testing the “Integrative-Brain Assessment” within this capstone does not support my premise that intuition is a bridge not just for our own unconscious information but also the unconscious information of the universal collective (Jung, 1976). The concept of being able to tap both internal and external intuitive intelligences can be further designed, researched and field tested within the context of when I pursue my Ph.D. in coaching.

#### **(vi) Research Data Gathering Process**

The research conducted for this capstone was based on a controlled data set of twenty-one (21) client coaching engagements. The field research was conducted by means of coaching sessions transcribed and semi-structured. The names and details of coaching participants have been coded to protect their anonymity and confidentiality.

My role in the capstone field study was one of coach and researcher. I personally conducted all coaching sessions. The research for this capstone was quantitatively measured through a case study pool of twenty-one (21) coaching participants – both male and female across multiple age brackets and employment history. The desired outcome for this research was to measure the ability of the coaching client to access their intuitive



decision-making process through a framework that was grounded in direct inquiry focused on the specific decision being considered.

The coaching client was instructed that the key to decision-making is not to wait for the perfect answer. Additionally, whether the final decision proves to be right or wrong will awaken the awareness for the coaching client as they take time to reflect on how they made the decision and what they based their conclusion on so that they can learn new insights in the unknown of their intuitive intelligence.

### **(vii) Research Data Observation**

*The research data reveals:*

(i) On a whole (both male and female) the data set reveals that there was a 41% reliance on using intuition by the coaching clients in the process of making an informed decision. The first observation of this data set is that the 41% falls short of the research benchmark used in this study based on the research conclusion compiled by Harvard researcher Jagdish Parikh, in that executives credited 80 percent of their business success in reliance upon using intuition in their decision-making (Williams, 2012; Kuo, 1998; Simon, 1987; Burke & Miller, 1999). Based on a surface comparison the level of experience of the research subjects surveyed by Jagdish Parikh appears to be more of a senior level status than the data set that I used for this capstone research. See Appendix:

Illustration 1: Whole Data Set Results

HEAD-BRAIN %	32.66%
HEART-BRAIN %	26.41%
GUT-BRAIN %	40.93%

(ii) Although the research data from this capstone falls short in comparison to the Jagdish Parikh surveyed research it does reveal a correlation that our intuitive intelligence works by constantly scanning our inner-environment trying to detect familiar situations. Specifically, as Gary Klein details in his profound book *Sources of Power*, which focused on the kinds of information we use to interpret in our decision-making process (Klein, 2013). Klein brings to light the idea that when we first detect a familiar situation, we often need more information to figure out what it all means. Hence, intuitive intelligence makes our job easier by providing us with features that we ought to pay closer attention to and guides us to take the appropriate action (Klein, 2013).

(iii) The next key issue to review in response to this research data is that where does intuition come from to support this research data? Klein (2013) puts forth the concept that intuition comes from patterns we've identified in our past experiences. From the time we are born, we constantly seek out patterns in our environment. We see 5+2 consistently paired with the number 7, we notice that striped animals that look like horses are called zebras. These patterns, once identified, get stored away in our unconscious memory (Klein, 2013). The next time we detect one of these patterns, our brain finds it in our unconscious file system and delivers us the corresponding data.

Therefore, intuition is a highly sophisticated process based on patterns we notice through past experiences that is retrieved when we see these patterns appear in for decision-making. Hence, I conjecture this means we're likely to have reliable intuitions in certain brain-domains and unreliable ones in others. And it is through experience that

we tap into the reservoir of our unconscious information so that it can be used for optimal decision-making supported and guided by the mechanism of our intuitive intelligence.

**(viii) Research Data Segmented**

By segmenting the research data between both male and female I wanted to see if there was a difference between the two groups, i.e. any change in the 41% of intuition by the whole data set. See Appendix: Illustration 2: Female Data Set Results and Illustration 3: Male Data Set Results.

FEMALE DATA SET	Illustration 2	MALE DATA SET	Illustration 3
HEAD-BRAIN %	26.89%	HEAD-BRAIN %	37.22%
HEART-BRAIN %	31.08%	HEART-BRAIN %	22.71%
GUT-BRAIN %	42.03%	GUT-BRAIN %	40.06%

Based on an initial comparison of the two data sets there is only a 2% difference between females using intuition more than their male counterparts. This reveals there is not a statistical difference between females and males in the use of intuition as an intelligence for decision-making. But what is very interesting is the data reveals an 8% difference between the heart-brain of females and males. As a coach-researcher I became intrigued by the difference in this data and sought to further research any connections.

I did find new scientific evidence from the research of Childre and Martin explained in their book *Heart Math Solution*, which shows “that the heart sends us both emotional and intuitive signals to help govern our lives” (Childre & Martin, 1999). They

go on to explain that intelligence and intuition are heightened when people learn to listen more deeply to their hearts. They suggest that:

“the human capacity to meet life’s challenges with fluidity and grace is based not on knowledge, logic or reason alone; it also includes the ability to make intuitive decisions (Childre & Martin, 1999).

I want to bring one additional perspective into the intelligence of the heart-brain that appears to correlate with females. We are all familiar with the sayings, “Listen to or follow your heart”. Deep down we all know that the place to look for inner guidance, inspiration, and inner peace is ‘in the heart’ - not in our head.

Therefore, it is apparent that intuitive intelligence is broader than I had originally expected in my hypothesis that intuition is only sensed within the gut-brain. It can be expected that emotional intelligence does resonate a feeling from within the heart-brain and adds an essence to the equation of our intuitive intelligence. What that is I don’t know at this point as it would take further research with the context of pursuing my Ph.D. in coaching. But my hunch is that it may be based on the inclination we have toward our openness to the feeling of emotions. Emotions that act like an intelligence as the way our sensing of intuition acts as an intuitive intelligence.

Let’s now review the 10% research data set difference in favor of males using their head-brain over females. On the surface this was very interesting and puzzling to me. Based on my in-depth research within the field of intuition for this capstone I propose that the male coaching clients may initially use their head-brain to make an assessment but will shift to the gut-brain to make a final decision as they are guided by

their intuitive intelligence. Meaning they may start with the head-brain as a sense of committed habit but then shift to the gut-brain as validation; their somatic sensing.

Thus, we see that although both female and male data sets are different in the head and heart-brain they both settle to around 41% at the gut-brain domain. Based on further research in the work of Dr. Robert Flower, author of *The Exceptional Mind*. Flower explains, “Emotions are your feelings, and intuitions are your sensing. Emotions will lie to you and intuitions are more valid, but we don’t trust them fully” (Flower, 2008). I propose that this statement by Flower is profound as there may be a reason our emotions are not used as the final determinate in the decision-making process. Meaning our emotions may add value to the perception of emotional intelligence within the context of interacting with others (our interpersonal frame of intelligence) but they are not sensing the complete information needed to make an optimal decision by fully using our intuitive intelligence.

#### **(ix) Future Field Testing**

Based on the initial research outcome for this capstone I propose taking new steps for future field research. First there needs to be a substantial increase in the number of coaching participants to draw a deeper analysis. The pool of research coaching clients may show a correlated outcome with this current research, but additional research needs to be conducted that could show the potential of new patterns of correlation or contradiction. Secondly, there needs to be a focus on seasoned executive clients as a separate research data set. This would have the potential to check against the surveyed results by Harvard researcher Jagdish Parikh who confirmed that executives credited 80

percent of their business success to relying on their intuition in decision-making (Williams, 2012; Kuo, 1998; Simon, 1987; Burke & Miller, 1999). Lastly, there needs to be a data set focused on Millennials; as this population group would be of interest to verify if the 41% research data set results correlate with or not with those having fewer years of life experience.

### *Adding an additional step*

For the purposes of this study I designed the “Integrative-Brain Assessment” to focus on the calculation of a quantitative outcome as a base-line for the coaching client to identify whether their conscious (cognitive intelligence) or their unconscious (intuitive intelligence) was influencing their decision. An additional Step 3 can be added to the “Integrative-Brain Assessment” to be researched and field tested within the context of when I pursue my Ph.D. in coaching. The objective would be to use a qualitative approach that focused on a series of direct questions with each coaching client. Here are a few sample questions that I designed that could be considered in field testing with each coaching client. (i) “What can be done about the inhibiting forces in the other domains (head, heart & gut) that you did NOT choose from?” The benefit of using this type of inquiry has the coaching client pause and consider as to what potential cognitive biases may be at play in not choosing their heart or gut domains. The next inquiry could be to ask the coaching client (ii) “What choice do you want to take now?” As the coach it is key to listen for the answer as to what is being stated and not being stated by the coaching client – learning to engage your own intuitive intelligence. Another inquiry could be (iii) “What would the outcome be if you take action with this choice? An additional inquiry

could be (iv) “What will you lose if you don’t take action?” Then a final inquiry could be “What would the next step look like to get started on your choice?”

### **Summary: Integrative-Brain Assessment Framework**

In summary, the “Integrative-Brain Assessment” looks at the head, heart and gut-brains as an interconnected intelligence system that functions in a complementary linear and non-linear continuum beyond the coaching client’s conscious awareness and seeks to tap into the unconscious stored information of the gut-brain. The “Integrative-Brain Assessment” is focused on engaging a coaching client’s intuitive intelligence to enhance the decision-making process by having the coaching client use the inner-sensation of intuition resonating from the domain of their gut-brain. This hypothesis is supported by the fact that the head, heart, and gut-brains individually act through the power of self-directed neuroplasticity supporting a different decision-making aspect, suitable for a different type of problem solving outcome (Schwartz & Begley, 2003; Hanson, 2009).

By acknowledging, embodying, and listening to our gut knowledge, heart wisdom as well as to the intelligence of our head-brain, we can begin to enjoy the benefits of functioning more as a whole and take advantage of sources of natural wisdom that most individuals don’t even know exist (Koffka, 2014). The key aspect here is that we are not observing beings, we are participating beings. It is only activity within the background of the world where anything is encountered so we really cannot question the environment (Husserl, 1970). This is echoed by the Philosopher Maurice Merleau-Ponty who coined the term “Primacy of Perception”. We are first perceiving the world, then we do philosophy. What is characteristic of Merleau-Ponty’s account of perception is the

centrality that the body plays. We perceive the world through our bodies; we are embodied subjects, involved in existence. Existence is “being the situation” (Wikipedia, 2017). Furthermore, as a researcher this reinforces my hypothesis that everyone’s intuitive intelligence signal is unique and that we each sense our intuitive messaging uniquely through the gut-brain and with the intentional practice of phenomenology we can become masters of the multi-brain connection to enrich our decision-making process.



## CHAPTER 6

### CONCLUSION AND NEW WAY FORWARD

In this closing chapter I put forth a call to the coaching community that through the introduction of capstone I have test piloted my design of an “Integrative-Brian Assessment” that has both the ability and capability to engage our head, heart, and gut-brains for optimal decision-making. This an assessment that taps the diverse set of information, resonating from the coaching client’s conscious and unconscious domains.

The information from the head-brain is where logic and reasoning are used to make decisions and is mostly associated with the question of ‘what’ (Huitt, 1996; Tallon, 1997). The heart-brain is where feelings and emotions are used in the decision-making process and is mostly associated with the question of ‘how’ (Tallon, 1997; McCraty et al., 2006). The gut-brain is where the information of intuition manifests itself as inner-wisdom within the decision-making process and refers to the connection of information that affects the action of behavior and is associated with the issue of ‘why’ (Kolbe, 1990; Baumeister et al., 1998; Emmons, 1986).

Therefore, without the head-brain, the decision will not be properly thought through and analyzed. Without the heart-brain, 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-brain, there will not be enough attention to managing risks nor enough willpower to mobilize and execute the decision based on intuitive intelligence (Brock, 2015).

## **Listening to the Whisper**

Based on my in-depth and wide research journey for this capstone I still propose that our intuitive intelligence is represented by a complex system that acts as a bridge between our conscious and unconscious mind. It uses a process of our brain that does not require extensive analytical reasoning. Our intuitive intelligence connects our primal instinct to help in our ability to reason. Our inner 'gut feeling' is the sensation we first experience when our intuitive intelligence is activated and is trying to communicate something important to our mind. It will often feel like a hunch or pull towards a certain decision. Sometimes it may even come as a whisper or the very first thought that comes to our mind when trying to decide on something.

As stated prior in Chapter 2, Carl Jung and Carl Rogers argued that our intuition is one of the most powerful mechanisms of our brain, going as far as to say that it is necessary for a positive mental health to cultivate our intuition. Rogers exclaimed that we must trust our intuition (Rogers, 1951). Jung concluded that humans who possessed optimal mental health held a certain level of openness to the deeper messages coming from the unconscious mind (Jung, 1976). Even researchers today have come to a similar conclusion about the importance of this deep connection to our unconscious. Primarily because, according to present psychological research, our brain's gray matter consists primarily of the unconscious mind. Even until about a hundred years ago science wasn't even aware of the role of our unconscious, but studies now show that only 20 percent of the brain's gray matter is utilized to our rational mind, while 80 percent of our brain's entire gray matter is dedicated to unconscious (Cholle, 2011).

## **Sharpening our Intuition**

Sharpening our intuitive intelligence is incredibly important to developing a comprehensive decision-making process. The key is to be aware of our thoughts, feelings, and sensations when making important decisions. Our intuitive intelligence isn't going to be loud and will more than likely be drowned out by our rational (irrational) thoughts, but that's where the "Integrative-Brain Assessment" can play a vital role. We need to have the courage to explore our gut sensations, not just use them with some vague idea of what they are. We really must take to heart the concept of knowing ourselves and focus the effort to become one with our intuitive intelligence that seeks to engage our gut sensations successfully for optimal decision-making.

## **New Way Forward**

I foresee that the "Integrative-Brain Assessment" presented in this capstone will grow in its importance as society evolves from a current stage of linear processing to an age of non-linear processing. This current age has tended to place a great emphasis on compartmentalized logical thinking, but to thrive in a faster non-linear age of thinking we need to become highly imaginative, innovative and intuitive (Pink, 2005). I envision that the alignment of our three-brains, is the optimal state in which our heart, head, and gut will be in a state of flow (Csikszentmihalyi, 1997). What does this mean for us as coaches? A 'flow' state is created through the alignment of each brain functioning at its efficient best. Dr. Gregory Stebbins proposes that this flow state is wisdom, defined as

“an integration of head, heart and hunch [gut] tempered through the experience of the individual ... a state of being that emerges from within the leader from the experience of integrating head, heart and hunch [gut]” (Stebbins, 2013).

Without the insight of using our head, heart, and gut for decision-making I wonder how we would be able to thrive in the fast-approaching Conceptual Age? (Pink, 2005). One of the main ideas is that there needs to be an intentional conscious integration of the head, heart, and gut-brains. I propose that we need to embrace the leaving of our head focus and engage the complimentary somatic messages resonating from within our gut-brain. That is what the “Integrative-Brain Assessment” brings to the forefront. It illuminates the awareness to shift from a compartmentalized way of thinking toward an inter-dynamic way of sensing that looks through the multiple frames of the head, heart, and gut-brains. With a shift in our narrow thinking we can expect to think differently and to envision decisions through an ‘Integrative Set of Lenses’.

*A practitioner’s perspective*

As a practitioner I designed the “Integrative-Brain Assessment” as a conceptual framework that works at multiple-levels – thoughts, emotions, and intuitions. Through my coaching practice, observation and reflection, I propose that by utilizing a multidimensional approach with a coaching client the appearance of an interwoven coaching framework across their interpersonal, intrapersonal, and transpersonal frames of awareness (LeBoon, 2017). The emergence of this three-prong concept has the potential for coaching clients to connect to their true source of being from the inside-out.

My academic journey in both coaching and organizational dynamics has supplied me with an in-depth of learning, experience and knowledge that has resulted in a deeper connection to a veiled integrative intelligent framework. This veiled integrative intelligent framework has led me to interpret and extrapolate the “Integrative-Brain Assessment” to another potential framework – that I will name here as the “Integrative-Intelligence Coaching Framework”. This “Integrative-Intelligence Coaching Framework” is grounded in the perspective of Systems Theory supported by the application of evidence-informed coaching (Wildflower & Brennan, 2011). From a systems coaching perspective, this “Integrative-Intelligence Coaching Framework” could be a powerful way to support a coaching client in understanding how the forces in their internal and external systems influence their ability to interact with what they want and can do in their system by expanding and changing their mindset (Ober, 2001).

I foresee this as a multidimensional framework that looks through three-frames of intelligence. It focuses from the ‘inside-out’ to engage the mindset dynamics of: how we think of ourselves, how we think of others, and how we think of ourselves in the world. Furthermore, the integration of these intelligences could elicit a greater awareness to emerge from an external space of not knowing toward an ‘Aha’ insight of knowing.

*Intrapersonal Intelligence Frame* – The intrapersonal frame is that area of our intelligence which is focused on our interior awareness to ourselves. It is the frame represented by our mindset that interconnects between our cognitive intelligence and our intuitive intelligence. To connect to our intrapersonal frame of intelligence, we must learn to know the many aspects of ourselves, particularly those which appear to conflict

with each other, and clarify who we want to truly be. When we integrate with our intrapersonal frame of intelligence, we find that we are more centered, whole and psychologically safe (Kowald, 2017; Gardner, 1983, 1993).

*Interpersonal Intelligence Frame* – The interpersonal frame is that area of our intelligence which is focused on our awareness with others through our relationships. It is the frame represented by our mindset that interconnects between our emotional intelligence and our intuitive intelligence. It is the frame of our emotional interaction with others and the rights and responsibilities which accrue to us and are demanded of us by those relationships. To connect to our interpersonal frame of intelligence, we must know what others' expectations are of us and respond to those expectations in a manner which is consistent with our own emotional integrity and ability. When we integrate with our interpersonal frame – relationships grow clearer, deeper and stronger with others (Gardner, 1983, 1993; Wildflower & Brennan, 2011; Orenstein, 2007).

*Transpersonal Intelligence Frame* – The transpersonal frame is that area of our intelligence which is focused on our awareness that connects us to the whole created cosmic order. It is the frame represented by our mindset that interconnects our internal cognitive intelligence, emotional intelligence, and intuitive intelligence with the external intuitive intelligence of the collective universe (Jung, 1976). It is the frame of our interaction and knowledge of the purpose we have in the larger scope of the cosmos. To make a connection to our transpersonal frame, we must connect beyond ourselves through collaboration with the world and respond with compassion and care. When we integrate with our transpersonal frame we begin to see the universal longing for justice as

our own knowing of how we are in harmony and unity with the energy and intelligence which facilitates the world. To engage and awaken to our transpersonal frame of intelligence, we must become sensitive to our own unconscious information and the collective unconsciousness of the universe (Wildflower & Brennan, 2011; Whitmore, 2013; Jung, 1976).

### *Deeper insights*

As a coach, it is critically important to listen to messages from all three-sources: head, heart, and gut to best support our coaching clients. Here is another way this ‘Head-Heart-Gut’ approach may add value to our coaching practice: What if our coaching client makes decisions or responds to situations from only one brain and ignores the others? This can occur when under pressure or from habit. As a coach, when faced with a possible situation like this with one of our coaching clients, consider following the framework of the “Integrative-Brain Assessment”. The benefit of using this assessment enables a coaching client to operate from an integrative framework that engages their head-brain (intellectually), their heart-brain (emotionally), and from their gut-brain (intuitively). Based on my coaching experience and observation the coaching client that makes the best optimal decisions tend to integrate and operate from all three-brains.

The key insight that this capstone has attempted to present is that by developing our ‘somatic intuition’, we can sense when and what our gut-brain is trying to tell us. We are not aware to most of these messages until they show up as a physical symptom in the body, i.e. our gut-brain. This somatic manifestation can inform us of what path to take or not to take in our decision-making process. Meaning the sensation, we encounter brings

our consciousness to listen to the unconscious inner-message that our intuitive intelligence is seeking to reveal in the support of our ability to make an optimal decision.

Hence, my objective within the chapters of this capstone has been to provoke new learning for myself as a coach and scholar and to challenge other coaches to embrace the metaphor of an 'Intuitive Revival'. An 'Intuitive Revival' that seeks to challenge and cultivate the deeper power of our 'Intuitive Intelligence'. A revival that illuminates our intrapersonal, interpersonal, and transpersonal domains of awareness through the integration of neuroscience based-research and the ancient wisdom cultures. And finally, a revival that empowers each of us to shift our current compartmentalized way of thinking toward an integrative way of sensing. An inner sensing that intentionally looks through the frames of our head, heart, and gut-brains for optimal decision-making.



## REFERENCES

- Agor, W. H. (1986). *The logic of intuitive decision making: A research-based approach for top management*. Westport, CT: Quorum Books.
- Albert Einstein Quote. (2017). Retrieved October 14, 2017, Goodreads.com,  
Retrieved from  
[https://www.goodreads.com/author/quotes/5870203.Angela\\_Artemis](https://www.goodreads.com/author/quotes/5870203.Angela_Artemis)
- Ammon-Wexler, J. (2014). *The Secret of Intuitive Intelligence*. Trans4Mind.com
- Ammon-Wexler, J. (2005). *Your Intuitive Intelligence*. Jillammonwexler.com
- Andersen, J. A. (2000). Intuition in managers: Are intuitive managers more effective? *Journal of Managerial Psychology*, 15, 1, 46-67.
- Armour, A. (2003). *Neurocardiology: Anatomical and Functional Principles*. Boulder Creek, CA: Institute of HeartMath.
- Banich, M. (2004). *Hemispheric Specialization*. In *Cognitive Neuroscience and Neuropsychology*. Boston, MA: Houghton Mifflin.
- Bastick, T. (1982). *Intuition: How we think and act*. New York, NY: John Wiley & Sons.
- Baumeister, R., Bratslavsky, E., Muraven, M., & Tice, D. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, 74(5), pp. 1252-1265.

- Behling, O., & Eckel, N. L. (1991). Making sense out of intuition. *Academy of Management Executive*, 5 (1), pp. 46-54.
- Beutler, L. E., Consoli, A. J. & Lane, G. (2005). Systematic treatment selection and prescriptive psychotherapy: an integrative eclectic approach. *Handbook of Psychotherapy Integration*, 2nd ed., pp. 121-143. New York, NY: Oxford.
- Benziger, I. K., & Sohn, A. (1993). *The art of using your whole-brain*. Rockwall, Texas: Whole-Brain Training.
- Betsch, T. (2008). *The Nature of Intuition and Its Neglect in Research in Judgement and Decision-making, Intuition in Judgement and Decision-making*. New York, NY: Eds. C. Betsch and T. Betsch, Laurence Erlbaum and Associates, pp. 3-22.
- Boehm, K. (2012). Retrieved January 3, 2018, Yale Scientific,  
Retrieved from  
<http://www.yalescientific.org/2012/04/left-brain-right-brain-an-outdated-argument/>
- Bolman, L.G., & Deal, T.E. (2008). *Reframing Organizations: Artistry, Choice, and Leadership*. San Francisco, CA: John Wiley & Sons.
- Bonabeau, E. (2003). Don't trust your gut. *Harvard Business Review*, 81, pp. 116-123.
- Brennan, D., Drake, D., & Gortz, K. (2008). *The Philosophy and Practice of Coaching: Insights and Issues for a New Era*. New York, NY: Wiley & Sons.

- Brock, V. (2015). Retrieved October 15, 2017, Vickibrock.com,  
Retrieved from  
<http://vikkibrock.com/wp-content/uploads/2014/05/UTD-Three-Brains-648efa8c-f301-4d1a-871b-5f4a09a315d7.pdf>
- Brooks-Harris, J. E. (2008). *Integrative Multitheoretical Psychotherapy*. Boston, MA: Houghton-Mifflin.
- Burke, L. A., & Miller, M. K. (1999). Taking the mystery out of intuitive decision making. *Academy of Management Executive*, 13(4), pp. 91–99.
- Buzzell, K. (2007). *Man, a Three-brained Being: Resonant Aspects of Modern Science and the Gurdjieff Teaching*. Salt Lake City, UT: Fifth Press.
- Cappon, D. (1993). The Anatomy of Intuition. *Psychology Today*, 26 (May-June), pp. 40-91.
- Carlson, L. K., & Kaiser, K. (1999). Intuitive intelligence. *Health Forum Journal*, 42(5), pp. 50-53.
- Childre, D., & Martin, H. (1999). *The Heartmath Solution*. New York, CT: HarperCollins.
- Cholle, F. (2011). *The Intuitive Compass: Why the Best Decisions Balance Reason and Instinct*. San Francisco, CA: Jossey-Bass.
- Claxton, G. (1998). Investigating human intuition: Knowing without knowing why. *The Psychologist*, pp. 217-220.

- Clemson, B. (1984). *Cybernetics: New Management Tool, Cybernetics and Systems Series, Vol 4*, 1st Edition. London, UK: Abacus Press.
- Csikszentmihalyi, M. (1997). *Finding the flow: The psychology of engagement with everyday life*. New York, NY: Basic Books/HarperCollins.
- Dane, E., & Pratt, M. (2007). Exploring intuition and its role in managerial decision making. *Academy of Management Review*, 32, pp. 33-54.
- Davis-Floyd, R., & Arvidson, P. S. (1997). *Intuition - The Inside Story*. New York, NY: Routledge Publishers.
- Dawes, R. M., Faust, D., & Meehl, P. E. (1989). Clinical versus actuarial judgment. *Contemporary Management Research*, 53 Science, 31, pp. 1668-1674.
- Damasio, A. (2004). *Looking for Spinoza: joy, sorrow and the feeling brain*. London, UK: Vintage Publishing.
- Damasio, A. (2005). *Descartes' Error: Emotion Reason and the Human Brain*. London, UK: Penguin Books.
- Dijksterhuis, A. (2004). Think different: The merits of unconscious thought in preference development and decision making. *Journal of Personality and Social Psychology*, 87, pp. 586-598.
- Dotlich, D. L., Cairo, P. C., & Rhinesmith. S. (2006). *Head, Heart, and Guts: How the World's Best Companies Develop Complete Leaders*. San Francisco, CA: Jossey-Bass Publishing.

- Dreyfus, H. L., & Dreyfus, S. E. (1986). *Mind over machine. The power of human intuition and expertise in the era of the computer*. New York, NY: The Free Press.
- Dunne, B. J. (1997). *Subjectivity and Intuition in the Scientific Method, Intuition: The inside Story*. New York, NY: Routledge, Publishing, pp. 121-128.
- Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal*, 13, pp. 17-37.
- Eisenhardt, K. M. (1999). Strategy as Strategic Decision Making. *Sloan Management Review*, 40.3, pp. 65-72.
- Elliott, J., & Kathryn, C. (1994). *Human Capability: A Study of Individual Potential and its Application*. Falls Church, VA: Cason Hall Publishers.
- Emmons, R. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, 51, pp. 1058-1068.
- Ferguson, G. (1999). *Cracking the intuition code*. Chicago, IL: Contemporary Books.
- Fishbein, M. (1987). *Intuition in Science and Mathematics*. Boston, MA: D. Reidel Publishing Company.
- Flower, R. (2008). *Your Exceptional Mind: Enhance Intelligence*. Bronxville, NY: Gilchrist Institute.
- Frank, M. J., O'Reilly, R. C., & Curran, T. (2006). When memory fails, intuition reigns. *Psychological Science*, 17, pp. 700-707.

Fuller, B. R. (1973). *Intuition*. New York, NY: Anchor Books.

Gardner, H. (1983; 1993). *Frames of Mind: The theory of multiple intelligences*. New York, NY: Basic Books.

Gershon, M. (1999). *The Second Brain: A Groundbreaking New Understanding of Nervous Disorders of the Stomach and Intestine*. New York, NY: HarperCollins.

Childre, D., Martin, H., & Beech, D. (1999). *The Heartmath Solution*. New York, CT: HarperCollins Publishers.

Gigerenzer, G. (1991). How to Make Cognitive Illusions Disappear: Beyond Heuristics and Biases. *European Review of Social Psychology*, 2, pp. 83–115.

Gigerenzer, G. (2007). *Gut Feelings: The Intelligence of the Unconscious*. New York, NY: Penguin Random House.

Goldstein, J. (1994). *The Unshackled Organization: Facing the Challenge of Unpredictability Through Spontaneous Reorganization. 1st Edition*. New York, NY: Productivity Press.

Goleman, D. (2005). *Emotional Intelligence: Why it Can Matter More Than IQ*. New York, NY: Bantam Books.

Gordon, O. (2011). Retrieved October 2, 2017, Salkawind.com,  
Retrieved from  
<http://salkawind.com/blog/archives/325>

- Govender, R. (2015). Retrieved November 24, 2017, Coachfederation.com,  
Retrieved from  
<https://coachfederation.org/blog/index.php/4452/>
- Grove, D., & Panzer, B. (1989). *Resolving Traumatic Memories: Metaphors and Symbols in Psychotherapy*. New York, NY: Ardent Media.
- Hadhazy, A. (2010). Think Twice: How the Gut's "Second Brain" Influences Mood and Well Being. *Scientific American*, February 12, 2010.
- Hammond, K. (1996). *Human Judgement and Social Policy: Irreducible Uncertainty, Inevitable Error and Unavoidable Injustice*. London, UK: Oxford University.
- Hanson, R. (2009). *Buddha's Brain: The Practical Neuroscience of Happiness, Love, and Wisdom*. Oakland, CA: New Harbinger.
- Hayashi, A. (2001). When to Trust Your Gut. *Harvard Business Review*, February 2001.
- Hebb, D. (1949). *The Organization of Behavior*. New York, NY: Wiley & Sons.
- Herrmann, N. (1996). *The Whole-Brain Business Book*. New York, NY: McGraw Hill.
- Hilborn, R. (2001). *Chaos and Non-linear Dynamics: An Introduction for Scientists and Engineers*. 2nd Edition. USA: Oxford University.
- Hobart, B. (1997). *Thought, Action and Intuition in Practice-Oriented Disciplines, Intuition: The inside Story*, Eds. R. Davis-Floyd and S. Arvidson. London, UK: Routledge Publishing, pp. 129-144.

Hodgkinson, G. P., Langan-Fox, J., & Sadler-Smith, E. (2008). Intuition: A fundamental bridging construct in the behavioral sciences. *British Journal of Psychology*, 99, pp. 1-27.

Hodgkinson, G. P., Sadler-Smith, E., & Sinclair M. (2006). More Than Meets the Eye? Intuition and Analysis Revisited, *Paper presented at the Academy of Management Annual Meeting*, Atlanta, Georgia, August 2006.

Huitt, W. (2007). Success in the Conceptual Age: Another paradigm shift. *Paper delivered at the 32<sup>nd</sup> Annual Meeting of the Georgia Educational Research Association*, Savannah, GA, October 26.

Huitt, W. (1996). Retrieved January 2, 2018, Edpsycinteractive.org,  
Retrieved from  
<http://www.edpsycinteractive.org/materials/elecfile.html>

Husserl, E. (1970). *The crisis of the European sciences and transcendental phenomenology*. Evanston, IL: Northwestern University Press.

International Coach Federation. Retrieved December 10, 2017, Coachfederation.org,  
Retrieved from  
<https://coachfederation.org/core-competencies>

Jarrett, C. (2012). Retrieved January 5, 2018, Psychologytoday.com,  
Retrieved from  
<http://www.psychologytoday.com/blog/brain-myths/201206/why-the-left-brain-right-brain-myth-will-probably-never-die>



- Jung, C. G. (1976). *Psychological Types*. New York, NY: Princeton University Press.
- Kahneman, D. (2011). *Thinking, Fast & Slow*. New York, NY: Farrar, Straus & Giroux.
- Kahneman, D., & Frederick, S. (2002). *Heuristics and Biases: The Psychology of Intuitive Judgment*. Cambridge, MA: Cambridge University Press.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment under Uncertainty: Heuristics and Biases*. Cambridge, MA: Cambridge University Press.
- Kautz, W. H. (2003). *Opening the Inner Eye: Explorations on the Practical Applications of Intuition in Daily Life and Work*. Bloomington, Indiana: iUniverse.
- Khatri, N., & Ng, H. A. (2000). The role of intuition in strategic decision making. *Human Relations*, 53, pp. 57-86.
- Klein, G. (2003). *Intuition at Work: Why Developing Your Gut Instincts Will Make You Better at What You Do*. New York, NY: Doubleday.
- Klein, G. (2004). *The Power of Intuition. How to Use Your Gut Feelings to Make Better Decisions at Work*. New York, NY: Crown Business.
- Klein, G. (2013). *Seeing What Others Don't: The Remarkable Ways We Gain Insight*. New York, NY: Public Affairs.
- Koffka, K. (2014). *Principles of Gestalt Psychology*. Oxford, UK: Routledge.
- Kolbe, K. (1990). *The conative connection*. Reading, MA: Addison-Wesley Publishing.

Kowald, T. (2017). Retrieved November 11, 2017, Connectionsacademy.com

Retrieved from

<http://blog.connectionsacademy.com/self-smarts-knowing-yourself-is-the-first-step-to-success/>

Kuo, F. (1998). Managerial Intuition and the Development of Executive Support Systems. *Decision Support Systems*, 24 (2), pp. 89-103.

Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. Chicago, IL: The University of Chicago Press.

Langley, A., Mintzberg, H., Pitcher, P., Posada, E., & Saint-Macary, J. (1995). Opening up decision making: The view from the black stool. *Organization Science*, 6 (3), pp. 260-279.

LeBoon, R. (2017). *Integrative Coaching: Coaching through three-frames of awareness Intrapersonal, Interpersonal and Transpersonal*. Philadelphia, PA: Unpublished.

Lieberman, M. D. (2000). Intuition: A social cognitive neuro-science approach. *Psychological Bulletin*, 126, 109–137.

Lewicki, P. (1986). *Nonconscious Social Information Processing*. New York, NY: Academic Press.

Loye D. (1983). *The Sphinx and the Rainbow: Brain, Mind and Future Vision*. New York, NY: Bantam Books.

Mastone, R. (2011). The Neuroscience of the Gut. *Scientific American*, April 19, 2011.

Matzler, K., Bailom, F., & Mooradian, T. (2007). Intuition Decision Making. *MIT Sloan Management Review*, Fall, 2007.

Maurice Merleau-Ponty Quote. (2017). Retrieved October 21, 2017, Wikipedia.org  
Retrieved from  
[https://en.wikipedia.org/wiki/Maurice\\_Merleau-Ponty](https://en.wikipedia.org/wiki/Maurice_Merleau-Ponty)

Mavor, P. (2009). Intuition in Coaching: Preliminary Findings of an Exploratory Study. *Lane4 EMCC UK Conference*, 2009.

Murray, E. (2004). Intuitive Coaching. *Industrial and Commercial Training*, 36, 5, pp. 203-206.

Mayer, E. A. (2011). Gut feelings: The emerging biology of gut–brain communication. *Nature Reviews Neuroscience*, 12, pp. 453-466.

Mayer, R. E. (1996). The search for insight: Grappling with gestalt psychology's unanswered questions. In R. J. Sternberg & J. E. Davidson (Eds.), *The nature of insight*, pp. 3-32. Cambridge, MA: The MIT Press.

McCraty, R., Atkinson, M., Tomasino, D., & Bradley, R.T. (2006). *The coherent heart: Heart-brain interactions, psychophysiological coherence, and the emergence of system-wide order*. Boulder Creek, CA: Institute of HeartMath.

Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy Safari: A guided tour through the wilds of strategic management*. New York, NY: The Free Press.

- Moore, N. (2016). Retrieved November 10, 2017, Mindsetcomms.co.uk,  
Retrieved from  
<http://www.mindsetcomms.co.uk/head-heart-gut-brains-three-physical-brains/>
- Morgan, G. (2006). *Images of Organization*. Thousand Oaks, CA: Sage Publications.
- Nadel, L. (1990). *Sixth Sense: The Whole-Brain Book of Intuition, Hunches, Gut Feelings, and Their Place in Your Everyday Life Upper*. Saddle River, NJ: Prentice Hall Press.
- Neethling, K. (2005). *Understanding Your Whole-Brain*. Pretoria, South Africa: Whole-Brain Thinking (Pty) Ltd.
- Nielsen, J. A., Zielinski, F., & Lainhart, A. (2013). *An Evaluation of the Left-Brain vs. Right-Brain Hypothesis with Resting State Functional Connectivity Magnetic Resonance Imaging*. Cambridge, UK: PLoS ONE.
- Nisbett, R. (2003). *The Geography of Thought: How Asians and Westerners Think Differently...and Why*. New York, NY: Free Press.
- Norcross, J. C. & Goldfried, M. R. (Eds.) (2005). *Handbook of Psychotherapy Integration (2nd ed.)*. New York, NY: Oxford University Press.
- Nutt, P. C. (1999). Surprising but true: Half the decisions in organizations fail. *Academy of Management Executive*, 13 (4), pp. 75-89.
- Ober, S. (2001). *Cracking the Culture Nut: Human Systems Consulting Guide*. Boston, MA: Arthur D. Little.

- Osho, B. (2002). *Intuition: Knowing beyond logic*. New York, NY: St. Martin's Press.
- Ohmae, K. (1982). *The Mind of the Strategist – The Art of Japanese Business*.  
New York, NY: McGraw-Hill.
- Oka, M., & Soosalu, G. (2012). *mBraining: Using Your Multiple Brains to do Cool Stuff*.  
Scotts Valley, CA: Createspace.
- Orenstein, R. (2007). *Multidimensional Executive Coaching*. New York, NY: Springer  
Publishing Company.
- Parikh, J., Neubauer, F., & Lank, A. G. (1994). *Intuition: The new frontier in  
management*. Cambridge, MA: Blackwell.
- Patton, J. (2003). Intuition in Decisions. *Management Decision*, 41 (10), pp. 989-996.
- Pearl, J. (1983). *Heuristics: Intelligent Search Strategies for Computer Problem Solving*.  
New York, NY: Addison-Wesley.
- Peckham, H. (2015). The unexpected interdependence of heart and mind. *An issue of the  
heart: The Neuropsychotherapist special issue*, pp. 111-118. Brisbane, Australia:  
Dahlitz Media.
- Pert, C. B. (1999). *Molecules of emotion: The science behind mind-body medicine*.  
New York, NY: Touchstone.
- Pink, D. (2005). *A Whole New Mind: Why Right Brainers Will Rule the Future*.  
New York, NY: Riverhead Books.

- Plessner, H., Betsch, C., & Betsch, T. (Eds.). (2008). *Intuition in judgment and decision making*. New York, NY: Lawrence Erlbaum.
- Polanyi, M. (1964). *Science, Faith & Society*. Chicago, IL: University of Chicago Press.
- Pouget, A. (2008). Retrieved April 7, 2018, ScienceDaily.com,  
Retrieved from  
<https://www.sciencedaily.com/releases/2008/12/081224215542.htm>
- Rajvanshi, A. (2011). Retrieved October 8, 2017, Nariphaltan.org,  
Retrieved from  
October 8, 2017 from <http://www.nariphaltan.org/gut.pdf>
- Reed, G. (2017). *The 7 Secrets of Neuron Leadership: What Top Military Commanders, Neuroscientists, and the Ancient Greeks Teach Us about Inspiring Teams*. Hoboken, NJ: John Wiley & Sons.
- Reitz, M. (2009). *Developing Intuitive Awareness: Further Techniques for Coaching and Mentoring*. Oxford, CT: Elsevier.
- Robinson, L. A. (2006). *Trust your gut. How the power of intuition can grow your business*. Chicago, IL: Kaplan.
- Rogers, C. R. (1951). *Client-centered therapy: Its current practice, implications, and theory*. New York, NY: Houghton Mifflin.
- Rowan, R. (1986). *The intuitive manager*. New York, NY: Little, Brown.

- Ruch, W. (2016). Character strengths: Unresolved issues, new frontiers. June 2016, Lecture, *8th European Conference on Positive Psychology*, Angers, France.
- Ruelas, B. (2011). *Psychology of intuition*. New York, NY: Nova Science Publishers.
- Sadler-Smith, E. (2008). *Inside Intuition*. London: Routledge Publishing.
- Sadler-Smith, E., & Sparrow, P. (2007). *Intuition in Organizational Decision-Making*. Oxford, UK: Oxford University Press, pp. 305-324.
- Sarbin, T., Taft, R., & Bailey, D. (1960). *Clinical Inference and Cognitive Theory*. New York, NY: Holt, Rinehart & Winston.
- Sauter, V. (1999). Intuitive Decision-Making. *Communications of the ACM*, 42 (6), pp. 109-116.
- Schoemaker, J. H., & Russo, J. E. (1993). A pyramid of decision approaches. *California Management Review*, 36, pp. 9-31.
- Schwartz, J. M., & Begley, S. (2003). *The mind and the brain: Neuroplasticity and the power of mental force*. New York, NY: Harper Perennial.
- Siegel, D. J. (2009). Mindful awareness, mindsight, and neural integration. *The Humanistic Psychologist*, 37(2), 137-158.
- Siderits, M., & Katsura, S. (2013). *Nagarjuna's Middle Way: Mulamadhyamakakarika (Classics of Indian Buddhism)*. Somerville, MA: Wisdom Publications.

- Silverman, D. (2000). *Doing qualitative research – A practical handbook*. Thousand Oaks, CA: Sage Publications.
- Simon, H. (1987). Making management decisions: The role of intuition and emotion. *Academy of Management Executive*, (1), pp. 57-64.
- Simon, H. (1992). What is an “explanation” of behavior?. *Psychological Science*, 3(3), pp. 150–161.
- Sinclair, M. (2005). Intuition: Myth or a Decision-making Tool?. *Management Learning*, 36 (3), pp. 353–370.
- Stebbins, G. (2013). Retrieved January 6, 2018, HuffingtonPost.com,  
Retrieved from  
[https://www.huffingtonpost.com/gregory-stebbins/letting-wisdom-lead-are-y\\_b\\_2878813.html](https://www.huffingtonpost.com/gregory-stebbins/letting-wisdom-lead-are-y_b_2878813.html)
- Stevens, D. (2013). Retrieved November 17, 2017, Yogaofthemind.com,  
Retrieved from  
<http://yogaofthemind.com/brain-synchronization/>
- Tallon, A. (1997). *Head and heart: Affection, cognition, volition as triune consciousness*. New York, NY: Fordham University.
- Thornton, R. (2007). Non-Linear Intuition. *Small Wars Journal*, September 30, 2007.
- Tomasino, D. E. (2011). *The heart of intuition: tools for cultivating intuitive intelligence*. pp. 247-260. Cheltenham, UK: Edward Elgar.



- Urdang, N. (2017). Retrieved October 8, 2017, Goodtherapy.com,  
Retrieved from  
<https://www.goodtherapy.org/blog/decision-making-techniques-learning-to-use-your-head-heart-and-gut-0713174>
- Wanjek, C. (2013). "Left Brain vs. Right: It's a Myth, Research Finds". *Live Science*, September 2, 2013.
- Westcott, M. (1968). *Toward a contemporary psychology of intuition*. New York, NY: Holt, Rinehart and Winston.
- Whitmore, J. (2013). Executive Corner Interview. *Cross Cultural Management: An International Journal*, Volume 20, Issue 3, 2013.
- Whitworth, L., Kimsey-House, K., Kimsey-House, H., & Sandahl, P. (2007). *Co-Active Coaching, 2nd edition*. Mountain View, CA: Davies-Black Publishing.
- Wiener, N. (1965). *Cybernetics*. Cambridge MA: MIT Press.
- Wikipedia. (2017). Retrieved November 1, 2017, Wikipedia.org,  
Retrieved from  
<http://en.wikipedia.org/wiki/Heuristic>.
- Wilberg, P. (2003). *Head, Heart and Hara: The Soul Centres of West and East*. London, UK: New Gnosis Publications.
- Wildflower, L., & Brennan, D. (2011). *The Handbook of Knowledge-Based Coaching: From Theory to Practice*. Hoboken, NJ: Jossey-Bass.

Williams, J. (2012). The Heart of Success and Human Potential, the X-factor and Light within us all. *SuperConsciousness Magazine*, October, 2012.

Williams, P. (2006). The Theoretical Foundations of Coaching. *Choice Magazine*, Volume 4, No. 2.

Wilson, E. O. (2002). *The Future of Life*. New York, NY: Random House.

Woiceshyn, J. (2009). Lessons from “good minds”: How CEOs use intuition, analysis and guiding principles to make strategic decisions. *Long Range Planning*, 42(3), pp. 298-319.

Woolfe, R. & Palmer, S. (2000). *Integrative and Eclectic Counselling and Psychotherapy*. Thousand Oaks, CA: Sage Publications.

APPENDIX

Illustration 1: Whole Data Set Results

Integrative-Brain Assessment Questions	Client 1	Client 2	Client 3	Client 4	Client 5	Client 6	Client 7	Client 8	Client 9
	Male/48	Female/53	Male/61	Male/34	Male/29	Female/28	Female/47	Female/43	Male/56
<b>1. Is the decision important to you and do you really want to reach it?</b>									
- What does your head think about this statement?	3	2	4	3	2	2	2	2	3
- What does your heart feel about this statement?	3	3	2	2	3	3	3	3	2
- What does your gut sense about this statement?	4	4	4	4	5	4	4	4	4
<b>2. Do you believe it's possible to reach this decision?</b>									
- What does your head think about this statement?	3	3	4	4	2	2	3	3	3
- What does your heart feel about this statement?	1	2	1	2	3	3	3	3	2
- What does your gut sense about this statement?	4	4	1	3	4	5	4	4	4
<b>3. Are you capable of reaching this decision?</b>									
- What does your head think about this statement?	2	3	4	5	2	3	2	2	3
- What does your heart feel about this statement?	3	2	2	4	2	2	3	3	2
- What does your gut sense about this statement?	4	4	1	3	5	4	5	5	4
<b>4. Why do you believe that you deserve to reach this decision?</b>									
- What does your head think about this statement?	2	3	4	4	2	3	1	2	3
- What does your heart feel about this statement?	1	1	2	2	3	2	3	3	2
- What does your gut sense about this statement?	3	4	3	3	4	4	4	4	4
<b>5. If you would know the decision outcome, what domain would it?</b>									
- What does your head think about this statement?	3	4	5	3	2	2	3	2	3
- What does your heart feel about this statement?	1	3	2	2	3	3	3	3	2
- What does your gut sense about this statement?	5	3	3	3	4	4	4	4	4
<b>6. Where do you have the strongest impulse to act for this decision?</b>									
- What does your head think about this statement?	3	3	3	3	2	2	2	3	3
- What does your heart feel about this statement?	1	2	2	2	2	3	3	3	1
- What does your gut sense about this statement?	5	4	4	4	4	4	4	5	5
<b>ASSESSMENT TOTALS</b>									
HEAD-BRAIN	16	18	24	22	12	14	13	14	18
HEART-BRAIN	10	13	11	12	18	16	18	18	11
GUT-BRAIN	25	23	16	20	26	25	25	26	25
<b>HEAD-BRAIN %</b>	<b>32.66%</b>								
<b>HEART-BRAIN %</b>	<b>26.41%</b>								
<b>GUT-BRAIN %</b>	<b>40.93%</b>								

Client 10	Client 11	Client 12	Client 13	Client 14	Client 15	Client 16	Client 17	Client 18	Client 19	Client 20	Client 21
Male/49	Male/37	Female/39	Female/61	Male/52	Male/36	Female/52	Female/34	Male/59	Male/28	Female/54	Male/56
3	4	2	2	3	3	2	3	3	4	2	3
2	2	3	4	2	1	4	3	2	2	3	3
4	1	4	4	4	4	3	2	4	2	4	5
3	4	3	2	4	3	3	3	3	4	3	3
1	2	3	3	2	2	3	3	2	2	3	2
4	1	4	4	3	4	4	1	4	2	4	5
3	5	2	3	3	4	2	4	3	4	2	3
2	2	3	4	1	2	3	3	2	2	3	2
3	2	4	4	4	4	4	2	3	2	5	4
4	4	3	2	3	3	2	3	4	5	2	2
2	3	2	4	1	1	3	2	2	2	3	3
3	1	4	5	4	4	4	2	3	3	4	5
3	4	2	2	4	3	1	4	3	4	3	2
2	2	3	3	1	2	3	2	2	2	2	3
4	1	4	4	4	4	4	3	4	2	4	4
3	4	2	3	3	4	2	4	3	4	3	3
2	2	3	4	1	2	3	3	2	3	3	2
4	2	5	5	5	5	5	2	4	2	4	5
19	25	14	14	20	20	12	21	19	25	15	16
11	13	17	22	8	10	19	16	12	13	17	15
22	8	25	26	24	25	24	12	22	13	25	28

