

**Validation and application of the Career
Quotient Indicator™ (CQI) Assessment
visual neuroscience profiling methodology
and framework**

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Executive Summary

The rapid adoption of generative artificial intelligence across enterprise environments has introduced a fundamental shift in how organizations operate, make decisions, and create value. While significant investments have been made in AI technologies, governance frameworks, and data infrastructure, a consistent pattern has emerged across industries: the success or failure of AI initiatives is increasingly determined by human behavior rather than technical capability.

This study builds upon the validated CQI (Career Quotient Indicator™) Assessment system to examine how neuroscience-based behavioral profiling can be applied to modern enterprise challenges, including AI workforce readiness, productivity optimization, risk management, and organizational performance. The findings demonstrate that behavioral tendencies, rooted in neurochemical and cognitive processes, play a central role in shaping how individuals interact with AI systems, respond to stress, make decisions, and communicate effectively.

Across multiple validation methods, including structured interviews, biological correlation, and large-scale field deployments, the CQI system has been shown to reliably measure behavioral patterns and translate those patterns into actionable insights. These insights are not only descriptive but predictive, enabling organizations to anticipate how individuals will behave under varying conditions, including those introduced by AI-enabled workflows.

Integration of Neuroscience and Enterprise Performance

The study establishes that behavior is not arbitrary or purely situational. Instead, it is influenced by measurable neurochemical systems that regulate motivation, emotional stability, cognitive focus, trust, and stress response. These systems interact dynamically, shaping how individuals process information, evaluate risk, and make decisions.

In traditional workplace contexts, these behavioral drivers influence leadership effectiveness, engagement, and productivity. In AI-enabled environments, they take on additional significance. Employees are now required to:

- Communicate with AI systems through structured prompts
- Evaluate outputs that may appear confident but may not be accurate
- Make rapid decisions under conditions of increased cognitive load
- Balance speed, efficiency, and accuracy

The study demonstrates that variations in trust, stress, communication ability, and cognitive processing directly influence these activities. As a result, organizations that fail to measure and manage these human variables are likely to experience inconsistent outcomes, increased risk, and reduced return on AI investments.

Validation and Practical Application

The CQI Assessment system has been validated through a multi-method approach across thousands of individuals and workforce environments, including behavioral interviews, comparative analysis with established assessments, biological correlation studies, and enterprise deployments. Validation results demonstrate high levels of alignment between CQI outputs and observed behavior, as well as strong participant agreement with assessment accuracy.

Large-scale field implementations further confirm the system's applicability across diverse populations and organizational contexts. In workforce development programs and enterprise environments, CQI has consistently produced actionable insights that support mentoring, training, and performance improvement.

Outcome-based validation indicates that organizations using CQI have achieved significant improvements in key performance metrics, including productivity, stress reduction,

engagement, and customer outcomes. These results reinforce the conclusion that behavioral insights, when applied effectively, can drive measurable business value.

Application to AI Workforce Readiness and Risk

A central contribution of this study is the extension of the CQI framework to AI workforce readiness. The findings demonstrate that the same behavioral factors that influence traditional workplace performance also determine how individuals interact with AI systems.

Trust influences whether employees accept or question AI outputs. Stress affects the likelihood of validation and error detection. Communication ability shapes prompt quality and output accuracy. Cognitive processing styles determine how individuals interpret and refine AI-generated information.

These relationships provide a basis for predicting AI-related behaviors, including overreliance on automated outputs, susceptibility to errors, and variability in productivity. By measuring these factors, organizations can identify potential risks before they manifest and implement targeted interventions to improve outcomes.

Legal and Strategic Considerations

The study also addresses the legal and regulatory implications of behavioral assessment in the context of AI. The CQI system is designed to be non-discriminatory, transparent, and aligned with established employment law principles, including EEOC guidelines. Its focus on job-relevant behavioral attributes and its avoidance of protected class data support its defensibility under emerging regulatory frameworks.

In addition, the system's emphasis on human-in-the-loop decision-making and explainable outputs aligns with the direction of AI governance standards, including NIST AI

RMF and ISO frameworks. This positions CQI as a viable tool for organizations seeking to enhance both performance and compliance.

Strategic Implications

The findings of this study suggest that organizations must expand their approach to AI readiness and workforce performance. Technology alone is insufficient to ensure success. Instead, organizations must consider the behavioral and cognitive characteristics of their workforce and how these characteristics interact with AI systems.

The CQI framework provides a means to operationalize this perspective, enabling organizations to:

- Assess workforce readiness for AI adoption
- Identify behavioral risk factors
- Personalize training and development
- Improve decision-making and communication
- Enhance productivity and performance
- Create marketing and sales team differentiators and improvements

Final Perspective

This study supports a broader conclusion that extends beyond AI:

The primary constraint on organizational performance is not technology, but human behavior.

As AI continues to reshape the workplace, this constraint becomes more pronounced. Organizations that understand and manage human behavior will be better positioned to realize the full potential of AI, while those that do not will continue to encounter variability, risk, and underperformance.

The CQI system provides a validated, scientifically grounded framework for addressing this challenge, establishing a foundation for what may be understood as a new discipline:

Human Risk Intelligence for AI Workforces.

Overview of the Study

This research study validates a new approach to personality profiling and brain balance scoring based on visual neuroscience storytelling and behavioral science rather than the observational models of the past, including the OPQ-32, Myers-Briggs, Predictive Index, Culture Index, Pymetrics, Kolbe, Six Working Geniuses, StrengthsFinder, the BIG-5, DiSC, Fisher, Hogan, the Enneagram, and other profiling models. Ideally, the potential wide range of applications includes AI adoption and effectiveness, talent acquisition, employee profiling and engagement, job satisfaction and retention, team building, sales and marketing communications and prospecting, and professional productivity through the understanding trust factors, soft skills, leadership situations, professional strengths, introversion/extroversion, and personal attributes based on a visual neuroscientific approach. CQI is the first and only assessment system to equate these factors with measured elements for biomarkers related to neurotransmitter and brain chemical levels and/or sensitivities. Further, the CQI assessment and SaaS platform is the first to use neuroscientific evaluations to match profiles for top performing individuals against talent acquisition candidates or sales/marketing prospects to ensure optimal alignment for soft skills, trust factors, attributes, strengths, profile types, ICPs, and culture fit.

Beyond talent acquisition, the CQI assessment model is in use by organizations, such as the Kollab Youth program sponsored by Wells Fargo, to support mentoring and internship programs, as well as educational program personalization. For the latter, the CQI 4STORY™ Framework offers a next generation approach to educational personalization beyond the widely accepted 4MAT framework.

CQI also has potential applications in sales and marketing to match prospects against Ideal Customer/Candidate Profiles (ICPs) to facilitate Account-Based Marketing campaigns and

sales prospecting initiatives. Additionally, CQI can be used for a variety of other purposes such as marketing personalization for websites where in copy and images are changed on-the-fly based on profile types. Also, for eCommerce where specific products or services are recommended to individuals based on profile types.

Acknowledgements

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1. Introduction

A substantial body of organizational research has historically demonstrated that leadership effectiveness, employee engagement, and workplace stress are primary determinants of productivity and business outcomes. For example, Gallup studies have consistently shown that disengagement remains pervasive, with only approximately one-third of employees actively engaged in their work, resulting in an estimated annual loss exceeding \$900 billion in productivity globally. Additional research has indicated that ineffective leadership correlates with significantly reduced team performance, with poorly managed teams exhibiting as much as 50 percent lower productivity and 44 percent lower profitability.

Workplace stress has similarly been identified as a critical factor influencing organizational performance. Estimates suggest that stress-related impacts account for approximately \$300 billion annually in healthcare costs, absenteeism, and lost productivity. High levels of stress are also associated with increased turnover, reduced engagement, and diminished cognitive performance. These findings are further reinforced by research from the Society for Human Resource Management (SHRM) and the Center for American Progress, which highlight the substantial financial burden associated with employee attrition, particularly at the executive level.

While these foundational findings remain relevant, the emergence of generative artificial intelligence (GenAI) has fundamentally altered the nature of work. Employees are no longer solely executing tasks but are increasingly responsible for interacting with AI systems to generate outputs, make decisions, and automate processes. This shift has introduced a new dimension of risk and variability that extends beyond traditional leadership and engagement challenges.

Recent research underscores that AI-related risks are often behavioral rather than technical. A growing body of literature indicates that AI systems tend to produce outputs that appear highly confident regardless of their accuracy, which can lead users to overtrust these outputs or mistrust the use of GenAI altogether. For example, analysis published in *The Atlantic* highlights that AI systems are designed to generate responses that are fluent and authoritative, even when incorrect, increasing the likelihood that users will accept flawed outputs without sufficient scrutiny. This phenomenon introduces a critical risk dynamic: **confidence amplification without corresponding accuracy** (The Atlantic, 2026, <https://www.theatlantic.com/ideas/2026/03/ai-confidence-trust/686464/>).

Similarly, generative AI has been shown to influence creative and cognitive processes in ways that may degrade originality and critical thinking over time. Research examining AI-assisted writing suggests that reliance on AI-generated content can lead to homogenization of ideas and reduced cognitive engagement, particularly when users default to accepting initial outputs rather than iterating or validating them (The Atlantic, 2026, <https://www.theatlantic.com/technology/2026/03/ai-creative-writing/686418/>). These findings indicate that AI does not merely augment human capabilities but also reshapes how individuals think, communicate, and make decisions.

Enterprise adoption patterns further reinforce the importance of human factors in AI deployment. A report by Deloitte Digital emphasizes that **mindsets and behavioral tendencies significantly influence the effectiveness of generative AI usage**, noting that users who approach AI with curiosity, skepticism, and discipline achieve markedly better outcomes than those who rely on it passively or uncritically (Deloitte Digital, <https://www.deloittedigital.com/us/en/insights/research/mindsets-matter-generative-ai->

[experiences-digital-product.html](#)). This suggests that individual cognitive and emotional profiles play a central role in determining AI performance at scale.

In addition, AI adoption is increasingly occurring in a decentralized, bottom-up manner within organizations. Employees frequently begin using AI tools independently, outside of formal governance structures, leading to what is commonly referred to as “shadow AI.” This pattern introduces additional risks, including inconsistent usage practices, exposure of sensitive data, and lack of oversight (Inc., 2024, <https://www.inc.com/brett-familoe/how-enterprises-are-embracing-ai-from-the-bottom-up/91315662>). Such dynamics highlight that AI-related risk is not confined to technical systems but is deeply embedded in human behavior.

Taken together, these developments suggest that the traditional drivers of organizational performance, such as leadership effectiveness, trust, stress, and engagement, now operate within a more complex environment where human interaction with AI systems becomes a critical determinant of outcomes. Trust, for example, can enhance collaboration and engagement, but in AI contexts it may also lead to overreliance on machine-generated outputs. Similarly, stress, which has long been associated with reduced productivity and increased error rates, may now exacerbate AI-related risks by encouraging individuals to accept outputs without adequate validation.

Research across thousands of individuals has identified trust, stress, and neurochemical influences as key drivers of workplace behavior. These same factors are now directly implicated in AI usage patterns. Elevated stress levels may lead individuals to rely on AI shortcuts, bypassing verification processes. High levels of trust may increase susceptibility to accepting incorrect outputs. Variations in communication ability may influence the quality of prompts, which in turn affects the accuracy and usefulness of AI-generated results.

Despite the growing recognition of these dynamics, current approaches to AI readiness assessment remain largely focused on technical infrastructure, data governance, and policy frameworks. While these elements are necessary, they are insufficient to address the behavioral variability that ultimately determines how AI systems are used in practice. Existing personality and workforce assessment tools, many of which are based on observational or self-reported models, have also proven limited in their ability to capture the neurobiological and behavioral factors that influence decision-making in high-pressure, AI-enabled environments.

Statement of the Problem

The research outlined above suggests that behavioral and neurobiological factors play a critical role in shaping how individuals interact with AI systems. However, organizations currently lack a validated framework for measuring these factors in a way that is:

- Scientifically grounded
- Operationally actionable
- Scalable across enterprise environments

Without such a framework, organizations are unable to effectively identify:

- Which employees are likely to overtrust AI outputs
- Which individuals may bypass validation under stress
- How communication and cognitive styles influence prompt quality
- Where behavioral risk factors may lead to security, compliance, or reputational issues

As a result, AI initiatives may fail not due to deficiencies in technology, but due to unmeasured and unmanaged human variability.

Accordingly, the central research question guiding this study is:

What components of modern neuroscience and behavioral science can be integrated into a practical framework for assessing and improving human readiness for AI usage, in a manner that enhances productivity while reducing operational, security, and compliance risks in enterprise environments?

Purpose of the Study

The purpose of this study is to develop and validate a neuroscience-based behavioral assessment framework capable of addressing the challenges outlined above. Specifically, the study seeks to:

- Extend the CQI system beyond traditional leadership and engagement applications to encompass AI workforce risk and readiness
- Integrate modern neuroscience research related to neurotransmitters and behavioral tendencies into a practical assessment model
- Demonstrate how neurochemical patterns influence AI-related behaviors, including prompting, validation, trust, and decision-making
- Provide a framework that can be used by organizations to personalize training, coaching, and AI governance strategies

In doing so, this study aims to move beyond legacy personality profiling approaches—such as Myers-Briggs, DISC, and other observational models, by introducing a **neuroscience-informed methodology** that aligns behavioral measurement with biological and cognitive processes.

Definition of Terms

For the purposes of this study, the following definitions are applied:

Neuroscience. The interdisciplinary study of the nervous system, including its structure, function, chemistry, and role in behavior and cognition.

Behavioral Risk (AI Context). The likelihood that an individual's cognitive or emotional tendencies will result in suboptimal or unsafe use of AI systems.

AI Readiness. The degree to which an individual or organization possesses the behavioral, cognitive, and procedural capabilities required to use AI effectively and responsibly.

Trust (Neurobiological Context). A behavioral tendency influenced by oxytocin and related systems, affecting belief in and reliance on external inputs, including AI outputs.

Stress (Neurobiological Context). A physiological and psychological state influenced by cortisol and norepinephrine, affecting decision-making, attention, and error rates.

Prompting. The process of communicating instructions to an AI system, requiring clarity, structure, and contextual understanding.

Limitations of the Study

While neuroscience has advanced significantly, the application of neurochemical insights to organizational behavior remains an emerging field. As such, several limitations should be acknowledged.

First, although correlations between neurotransmitter activity and behavioral tendencies are supported by research, direct measurement of these systems in real-world organizational settings is inherently complex. The CQI Assessment system addresses this challenge by using validated proxy measures derived from behavioral inputs, but some degree of approximation is unavoidable.

Second, the rapidly evolving nature of AI technologies introduces additional variability. As AI systems improve and organizational practices mature, the specific manifestations of

behavioral risk may change. However, the underlying neurobiological drivers of behavior are expected to remain relatively stable.

Third, while this study incorporates both historical research and recent findings related to AI usage, the field of AI behavioral science is still developing. Continued longitudinal research will be necessary to further validate and refine the proposed framework.

Despite these limitations, the convergence of neuroscience, behavioral science, and AI research provides a strong foundation for developing practical tools to assess and improve human readiness for AI-enabled work.

2. Modern Neuroscience

Overview of Contemporary Neuroscience Perspective

Advances in neuroscience over the past several decades have shifted the field away from simplified, compartmentalized models of brain function toward a more integrated and systems-based understanding. Earlier frameworks, such as the Triune Brain theory, attempted to assign discrete behavioral functions to distinct anatomical regions. While historically influential, such models are now considered overly reductive and inconsistent with contemporary findings.

Modern neuroscience recognizes that behavior emerges from dynamic interactions across distributed neural networks, modulated by neurochemical signaling. Cognitive processes, emotional responses, and decision-making are not isolated functions but are instead the result of coordinated activity across multiple brain regions and systems.

Nevertheless, functional distinctions remain relevant. Broadly speaking, neuroscientists continue to distinguish between:

- **Cortical systems**, particularly the neocortex, which are associated with higher-order cognitive processes such as reasoning, language, planning, and abstract thinking
- **Subcortical and limbic systems**, which are more closely associated with emotional processing, reward, threat detection, and memory formation

These systems do not operate independently. Rather, they interact continuously, with emotional signals influencing cognition and cognitive processes modulating emotional responses. This interaction is particularly important in environments characterized by uncertainty, time pressure, and information overload, all of which are prevalent in modern AI-enabled workflows.

Neurochemical Modulation of Behavior

While brain regions provide structural context, behavior is more directly influenced by neurochemical activity, including neurotransmitters and hormones that regulate neural communication. The CQI framework focuses on several key neurochemical systems that have been widely studied in neuroscience and psychology.

Dopamine and Motivated Behavior

Dopamine plays a central role in motivation, reward processing, and exploratory behavior. It is associated with the pursuit of novelty, reinforcement learning, and goal-directed action. Elevated dopaminergic activity has been linked to increased curiosity and experimentation, while lower levels are associated with more cautious, internally focused processing.

In AI contexts, dopamine-related tendencies influence:

- The likelihood of adopting new AI tools
- Frequency of interaction with AI systems
- Willingness to experiment with prompts and outputs

However, heightened exploratory behavior may also increase exposure to risk, particularly when experimentation occurs without appropriate validation or governance.

Serotonin and Behavioral Regulation

Serotonin is associated with mood regulation, behavioral stability, and impulse control. It contributes to consistency in decision-making and adherence to established norms and rules.

In organizational and AI usage contexts, higher serotonergic influence is associated with:

- Structured thinking
- Policy adherence
- Disciplined workflows

Conversely, lower serotonergic regulation may enable greater flexibility and creativity but may also reduce adherence to procedural safeguards, including those related to AI governance.

Norepinephrine and Cognitive Activation

Norepinephrine is involved in attention, arousal, and the detection of salient stimuli. It supports cognitive focus and is particularly active in situations requiring vigilance or rapid information processing.

Higher levels of norepinephrine are associated with:

- Analytical thinking
- Heightened awareness of potential errors
- increased sensitivity to risk

In AI-enabled environments, these characteristics support:

- Identification of hallucinated or incorrect outputs
- Careful validation of AI-generated content

However, excessive activation, particularly in conjunction with elevated stress, may lead to cognitive overload and decision fatigue.

Oxytocin and Trust Formation

Oxytocin is widely recognized for its role in social bonding and trust formation. It influences how individuals evaluate the reliability of external inputs, including information provided by other people or systems.

In the context of AI, oxytocin-related processes are particularly relevant to:

- Perceived credibility of AI outputs
- Willingness to accept recommendations without verification

- Ability to trust and foster trust with colleagues, subordinates, superiors

Recent analyses have highlighted that AI systems often produce outputs that are linguistically fluent and confident, even when incorrect. This combination of fluency and confidence can increase user trust, creating conditions in which individuals may accept outputs without sufficient scrutiny (The Atlantic, 2026, <https://www.theatlantic.com/ideas/2026/03/ai-confidence-trust/686464/>).

Cortisol and Stress Response

Cortisol is the primary hormone associated with the physiological stress response.

Elevated cortisol levels are linked to:

- Urgency and time pressure
- Reduced working memory capacity
- Reliance on cognitive shortcuts

In high-stress environments, individuals are more likely to prioritize speed over accuracy, leading to increased error rates. In AI contexts, this may manifest as:

- Acceptance of initial outputs without validation
- Reduced iteration in prompting
- Increased likelihood of exposing sensitive data under time constraints

Research on cognitive load and stress indicates that individuals under pressure are less likely to engage in effortful verification processes, increasing susceptibility to errors in decision-making.

Interaction Between Cognitive and Emotional Systems

The interaction between cortical (cognitive) and limbic (emotional) systems is central to understanding behavior in AI-enabled environments. Emotional signals, including those

associated with trust and stress, can significantly influence cognitive processes such as reasoning, evaluation, and decision-making.

For example:

- Elevated trust (mediated by oxytocin) may reduce skepticism, leading to increased acceptance of AI outputs
- Elevated stress (mediated by cortisol and norepinephrine) may reduce cognitive capacity, leading to reliance on heuristics and shortcuts and reduction of trust in others
- High motivation (mediated by dopamine) may increase engagement but also encourage rapid iteration without validation

These interactions suggest that effective AI usage requires not only cognitive capability but also emotional regulation and behavioral discipline.

Neuroscience and AI Usage Behavior

Recent research has begun to examine how individuals interact with AI systems and how these interactions are shaped by cognitive and emotional factors.

Studies on generative AI usage indicate that:

- Users often attribute greater authority to AI-generated content than is warranted
- Confidence in outputs is not a reliable indicator of accuracy
- Repeated use of AI tools can reduce independent critical thinking over time

For example, research on AI-assisted writing suggests that reliance on AI may lead to reduced originality and increased convergence toward common patterns of expression, particularly when users accept outputs without modification (The Atlantic, 2026,

<https://www.theatlantic.com/technology/2026/03/ai-creative-writing/686418/>).

Similarly, enterprise studies have found that user mindset and behavioral approach significantly influence AI outcomes. Individuals who actively question, refine, and validate AI outputs achieve more accurate and useful results than those who rely on AI passively (Deloitte Digital, <https://www.deloittedigital.com/us/en/insights/research/mindsets-matter-generative-ai-experiences-digital-product.html>).

In addition, the decentralized adoption of AI within organizations, often driven by individual employees rather than centralized initiatives, has introduced new forms of risk. Employees frequently adopt AI tools independently, leading to inconsistent usage patterns and potential exposure of sensitive information (Inc., 2024, <https://www.inc.com/brett-familoe/how-enterprises-are-embracing-ai-from-the-bottom-up/91315662>).

Implications for Behavioral Profiling

The integration of these findings suggests that behavioral tendencies influenced by neurochemical activity provide a meaningful basis for predicting AI usage patterns.

Specifically:

- Individuals with higher exploratory tendencies may adopt AI rapidly but require guidance to ensure appropriate validation
- Individuals with strong regulatory tendencies may adhere to policies but may require support to fully leverage AI capabilities
- Individuals experiencing elevated stress may require interventions to reduce cognitive load and improve decision quality

The CQI framework leverages these relationships by mapping neurochemical influences to observable behavioral patterns, enabling organizations to assess:

- Readiness for AI adoption

- Susceptibility to AI-related risks
- Training and support requirements
- Team collaboration and trust factors

Summary of Neuroscience Framework

In summary, contemporary neuroscience supports the view that behavior is shaped by the interaction of distributed neural systems and neurochemical modulation. These factors influence how individuals perceive, interpret, and act on information, including outputs generated by AI systems.

The integration of neuroscience with AI behavioral research provides a foundation for understanding why individuals differ in their interactions with AI and why these differences can lead to variability in outcomes. By grounding behavioral assessment in neurochemical and cognitive principles, the CQI framework offers a scientifically informed approach to measuring and improving AI workforce readiness.

3. Current Personality Profiling Models

The term *psychology* is derived from the Greek words *psyche*, meaning “spirit, soul, and breath,” and *logia*, which means “the study of something.” Psychology is the study of mental and behavioral processes—how humans interact with and react to the world around them. Ancient Greek philosophers were the founders of psychology, but the German psychologist Wilhelm Wundt set up the first “psych lab” back in 1879 (Kleinman, 2012, p. 7). Since then, the science has spurred dozens of studies and theories about what makes people “tick.”

One of the most well-known psychologists in history is Sigmund Freud (Kleinman, 2012, pp. 20-31). Born in 1865, Freud spent most of his life in Vienna, where he wrote three books about dream interpretation, psychopathology, and sexuality. He is remembered most for the latter, but Freud gave the world many of its modern concepts about the human id, ego, and superego. Freud observed that humans have three brains, but lacking neuroscientific knowledge, he did not understand why.

The id refers to that unorganized portion of the personality structure related to basic animal instincts and bodily needs. The id is motivated by pain and pleasure. Naturally, people want to avoid one and seek the other. As babies, all humans are controlled almost entirely by the id, which is why some people cry every time they get hungry. Some may still do that, even as adults.

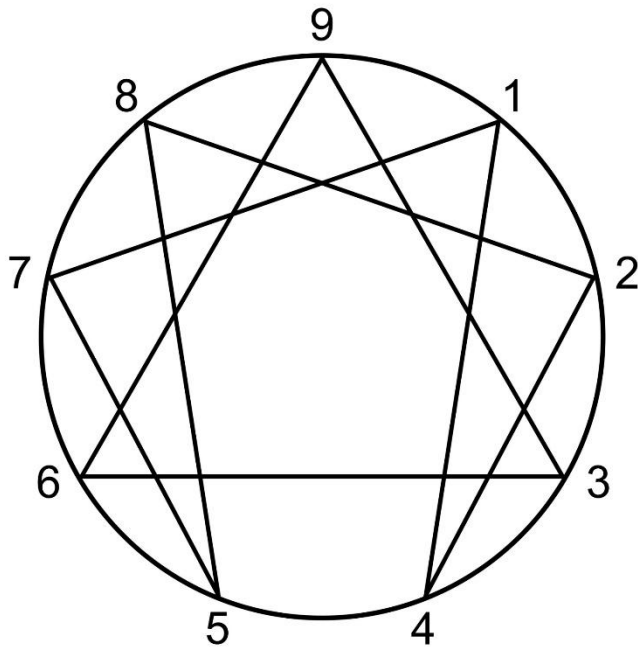
As children become adults, they learn to control id impulses lest they pee in their pants or attack the waiter at a fancy restaurant with a fork rather than wait patiently to be served. Addictions and severe temper tantrums stem from an inability to properly control id impulses. The id is the raw animal within everyone, the untamed beast, unconcerned with right, wrong, good, evil, or morality. Within the id resides the instinctual drive to survive.

Superego is the learned rules, guidelines, boundaries, etiquette, and proper communication skills, such as flushing the toilet, saying thank you, etc. Most learned these appropriate behaviors from parents, teachers, siblings, friends, and so forth. When someone did something bad, they were given pain, such as a belt whipping from dad. When they did something good, they received a dose of pleasure, like ice cream from mom. The superego learned how to behave appropriately through this process of emotional pain and pleasure learning.

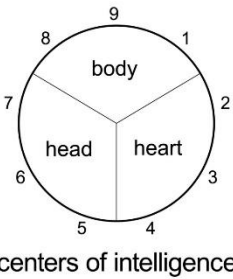
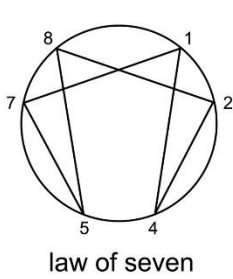
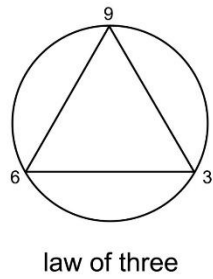
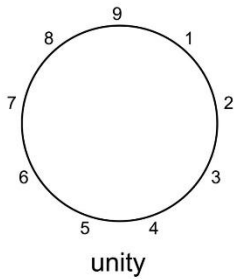
The ego deals with the part of personality structure that controls the perceptive, defensive, cognitive, and executive functions. Reason and common-sense stem from the ego. A primary ego function is to mitigate between the id and ego while striking the right balance between primitive drive and modern reality. The ego logically organizes thoughts and make sense of them. Unlike the id, where raw passions reside, the ego deals with reason and common sense. When the ego is healthy, people have better control over base instincts, such as the need to lash out in anger or run from potential conflict.

Freud's conclusions intimate that the id is predominantly involved with instinctual brain functions. The ego appears to be more involved with emotional functions, and the ego is rational and pragmatic and more logical. Could it be that Freud had the same observations as the ancient Greeks? It appears that both proffered the concept that humans have three distinct brains that tend to be more emotional, instinctual, or logical.

Ancient Personality Profiling Models



- 1 Reformer
- 2 Helper
- 3 Achiever
- 4 Individualist
- 5 Investigator
- 6 Loyalist
- 7 Enthusiast
- 8 Challenger
- 9 Peacemaker



(Peter Hermes Furian, Dreamstimes.com)

The Enneagram symbol is an interconnected circle made of nine points used to depict nine distinct personality types. Some people believe the ancient Greeks invented the diagram and science, but evidence of its origination can be found in four-thousand-year-old Pythagorean geometry. The Pythagoreans were an inquisitive bunch and were captivated by the deeper meaning and significance of numbers. Plato apparently studied the Enneagram theories and passed them on to his disciple Plotinus and other followers.

George Gurdjieff (Howell, 2012), a Russian teacher and follower of Freud, learned about the Enneagram in the 1920s while visiting a Sufi monastery in Afghanistan. Oscar Ichazo learned about it from Gurdjieff, and Claudio Naranjo heard about it from Ichazo. Robert Ochs and Helen Palmer researched the Enneagram by studying Naranjo's concepts, but the most famous authors on the Enneagram are Riso and Hudson of The Enneagram Institute.

Some question whether the Enneagram is accurate. The ancient Greeks invented the water mill, odometer, alarm clock, cartography, geometry, medicine, philosophy, and democracy. They excelled in the fields of astronomy, biology, and physics. Aristotle postulated that our world was round, and the Pythagoreans proposed that the earth revolved around the sun. Archimedes discovered that submerging a solid object displaces a like measure of water. The Greeks weren't infallible, but they were obviously highly observant and accurate. It is possible that the research conducted by the ancients on human personalities is bunk, but considering the advanced knowledge displayed by the ancients that used the Enneagram, this appears to be unlikely. Moreover, given recent discoveries made by modern neuroscientists, it is possible that the personality profiles outlined in the Enneagram are quite accurate.

The Development of Modern Personality Profiling Models

During the early 1900s, humanist psychologist Carl Rogers (Kleinman, 2012, pp. 115-118) proffered his "self theory." He believed that all humans are infused with a single driving motivation: to self-actualize. He defined this state as achieving the highest level of "human-beingness." Others have simplified this theory to being happy or filled with joy in every aspect of one's life—including professions.

Modern psychology views personality through the lens of an individual's emotions, behaviors, thoughts, actions, and reactions. These make people unique in relation to others and are referred to as mental models (Johnson-Laird, 2012, pp. 131-138). Although humans exhibit

personality characteristics in individualized ways, there are definite commonalities. Traits remain relatively constant throughout one's life. The caveat here is whether they are acting in healthy or unhealthy ways.

In addition, individual or not, people tend to behave in similar and sometimes predictable ways when faced with certain situations or decisions. Although the study of personality is decidedly a psychological science, many experts now agree that personalities are impacted by neurological wiring and processes. Some psychologists, like Sigmund Freud (Kleinman, 2012, pp. 115-118), subscribe to the "nature" theory, believing that biology (today more commonly referred to as neuropsychology) entirely governs our personalities. Others, like Alfred Adler (Kleinman, 2012, pp. 44-47), lean toward the "nurture" theory, in which personalities are governed entirely by experiences, environment, and societal factors.

Many other experts have a leg in both camps. They point to identical twins or triplets exposed to similar environments and home situations who exhibit completely different personalities. They claim that nature is to blame for core personality types but that different nurturing aspects can alter levels of psychological health and account for diverse individuality.

In the mid-1930s, Gordon Allport (Kleinman, 2012, pp. 176-177), a Harvard graduate, became the first psychologist in the United States to teach a class about personalities. He also created a trait theory that used more than 4,500 dictionary words to describe different traits. He divided these traits into three categories he named cardinal (individual), central (common), and secondary (conditional) traits. Years later, Raymond Cattell reduced Allport's long list to 171 traits by combining and reclassifying similarities and removing uncommon ones. Using questionnaires completed by individual subjects, he narrowed the list even further to only sixteen types that included perfectionism, dominance, apprehension, warmth, etc. Allport's observations

provided some of the foundational elements used in the sixteen Myers-Briggs personality profiles.

Modern Professional Personality Profiling Models

Some psychological researchers refer to a five-factor model (Goldberg, 1992) when evaluating what they believe are five core attributes, or personality traits, displayed by individuals. Usually referred to as the “BIG 5,” the qualities determined include Openness to experience, Conscientiousness, Extraversion-introversion, Agreeableness, and Neuroticism. These five form the acronym OCEAN. To determine a person’s attributes, psychologists use question-based testing to measure the degree to which respondents believe they exhibit these traits.

The OCEAN model has been used to determine relationships between these attributes and personality traits for professional, academic, and social endeavors. Critics claim that the model has limitations given the small number of attributes evaluated and also that it is primarily a data-driven model that is not based on any psychological theories. Proponents argue that OCEAN can create consistent results and that psychological theories should follow and not precede a personality description. A six-factor model, called HEXACO, has been recently introduced that adds an honesty and humility factor to the OCEAN five behaviors. Neither of these models, however, are based on neuroscientific theories such as neurotransmitter or brain chemical balances.

OPQ32 is a personality “test” widely used in professional and employment circles for selection, development, team building, succession planning, and organizational change. The SHL Group, purveyors of the OPQ, completed a study in 2005 in concert with The Enneagram Institute and discovered that the nine personality types proliferated by the ancients are real and

objective and stand on a par with Myers-Briggs, the Big Five, and other prominent psychological systems (Brown & Bartram, 2005).

The OPQ32, backed by hundreds of validation studies across tens of thousands of individuals, is one of the most widely used and highly regarded measures of personality in the workplace. Professors Dave Bartram and Anna Brown conducted an independent study of the Enneagram Institute interpretation made by Don Riso and Russ Hudson to see if it related to the OPQ32 and discovered a clear match (Brown & Bartram, 2005).

Bartram and Brown reviewed information from hundreds of volunteer participants from different countries. The results indicated a strong relationship between the nine Enneagram personality types and OPQ32 traits. In fact, based on a person's OPQ32 profile, someone could predict the Enneagram type 75 percent of the time. One could do this only 11 percent of the time by guessing. The conclusion is that modern researchers have all but validated the observational science recorded by ancient researchers from as long ago as 2000 BC.

Helen Fisher's Personality Quiz has now been taken by over 14 million people in 40 countries. This quiz is one of the first to equate brain science to personalities, and was created to test the degree to which someone expresses four broad styles of thinking and behaving, each associated with one of four basic brain systems related to dopamine, serotonin, testosterone and estrogen. Fisher labels these four types as:

Explorer: those who primarily express traits linked with dopamine.

Builder: those who primarily express traits linked with serotonin.

Director: those who primarily express traits linked with testosterone.

Negotiator: those who primarily express traits linked with estrogen.

Studies show that it is not unusual to score equally on two (or sometimes three) of these temperament dimensions. Fisher initially designed the test to enable individuals to understand basic aspects related to their romantic partners, as well as attraction tendencies. The test was not designed to determine optimal profiles for employment or other professional uses, however, it has been used for this purpose by some organizations. While Fisher's studies relate brain science to personalities, the approach still relies upon observation rather than tendencies based on neuroscience. For example, Fisher observed that individuals with certain serotonin setpoints tended to act in certain ways, rather than research how serotonin affects personality and tendencies (cause and effect versus effect and cause).

Summary

Virtually all personality profiling models have been based upon unscientific observational methods dating back thousands of years, beginning with the creation of the ancient Enneagram model. This methodology was not expanded upon until a few hundred years ago, when psychologists developed early personality profiling models, again based on observations.

More recently, respected institutions and researchers have expanded upon or streamlined historical personality profiling models to create frameworks and systems used primarily for personal amusement and not for professional environments such as employment screening or jury selection. However, all these models still rely upon observational methods only, what has been observed across thousands of individuals, to create profiles that appear to be relatively correct. Modern neuroscience and research conducted by Ph.Ds. involved in this new field offer validation in some respects for these older models while providing the opportunity to create more effective frameworks based upon neuroscientific cause and effect. More importantly, as reviewed previously, virtually all current personality or professional performance assessment

tests are text or word-based. They appeal to only 10 percent of the decision-making brain areas, which causes a “bad in, bad out” test result that lowers attention, retention, and accuracy.

4. Defining a Neuroscience-Based Framework

A paper published in the *Academy of Management Perspectives* in 2011 titled *Leadership and Neuroscience: Can We Revolutionize the Way That Inspirational Leaders Are Identified and Developed?* (Waldman, Balthazard, & Peterson, 2011) explores the relationship between inspirational leadership and neuroscience. The authors noted that there are a number of indicators available to interpret brain activity, including coherence, which is an often-used metric for social cognitive neuroscience research. Coherence measures interconnection between areas of the brain, and can track coordinated activity or communication between brain regions. As such, coherence can be used to examine complex behavioral concepts such as inspirational leadership behavior.

The researchers determined that this type of behavior likely requires the use of multiple brain regions such as emotional and cognitive centers (Cacioppo, Berntson, & Nusbaum, 2008; Nolte, 2002). Percentages are used to report coherence. For example, 90 percent coherence indicates a high degree of coordinate activity between two brain areas, while 10 percent indicates less coordination.

Authors have commented on the importance of using an emotional component when expressing visionary communication that appeals to the beliefs and personal values of the listener to motivate and inspire (e.g., Boal & Hooijberg, 2001; Shamir et al., 1993). An emotional appeal is important from the perspective of what a leader experiences and shares to ensure listeners also experience these emotions so they will readily follow (Barsade & Gibson, 2007; George, 2000). This theory appears to align well with the emotional appeal expressed in Aristotle's persuasion model discussed in the previous chapter.

Researchers (Boyatzis, R, 2011) have explored the relationship between activated brain regions and a leader's ability to build resonant or dissonant relationships with followers (Goleman, Boyatzis & McKee, 2002). Using an fMRI-based study, they explored which neural mechanisms were invoked in resonant and dissonant leadership relationships. Middle-aged subjects were queried about specific incidents with leaders while the researchers conducted fMRI scans. Preliminary observations indicated that the recollection of resonant experiences stimulated 14 brain regions while dissonant situations activated 6 and deactivated 11 regions.

Resonant leader experiences activated neural systems involved with attention arousal (i.e., anterior cingulate cortex), the default or social network (i.e. right inferior frontal gyrus), the mirror system (i.e., the right inferior parietal lobe), and other regions associated with approach relationships (i.e., the right putamen and bilateral insula).

For dissonant leader experiences, systems deactivated included social or default networks (i.e., the posterior cingulate cortex) and the mirror system (i.e., the left inferior frontal gyrus). Activated regions included those associated with diminishing attention (i.e., bilateral anterior cingulate cortex), and with less compassion (i.e., left posterior cingulate cortex), and negative emotions (i.e., posterior inferior frontal gyrus).

This study indicates that positive or negative situations stimulated by specific leadership styles or approaches can activate specific brain regions that could evoke a positive or negative reaction on the part of the listener or follower.

A May 9, 2015 article in *Psychology Today* states that around 20 percent of the population is likely more emotionally sensitive in nature (Bergland, 2015). The article cites findings from University of British Columbia and Cornell University neuroscientists who

discovered that human genes may influence how sensitive certain people are to emotional information.

In other words, some people may be genetically wired to be more emotional as compared to the average human being. Furthermore, Todd et al. (2015) determined that some people have a genetic variation called ADRA2b, which influences the norepinephrine neurotransmitter.

ADRA2b is linked to heightened activity in certain brain areas that can trigger intense emotional sensitivity and responses.

To summarize, neuroscientists from two respected universities proffered research indicating that a percentage of the human population is genetically wired to be more emotional, which may be directly related to levels of norepinephrine. Furthermore, this research shows how the norepinephrine pathways connect directly to the hippocampus and amygdala, which are located in the limbic system.

Adam Anderson (University of British Columbia, 2015), professor of human development at Cornell University and senior author of the study, stated that emotions aren't just about how someone feels about the world, but also how a person's brain influences perception. Human genes can influence how a person visualizes negative and positive aspects in the environment.

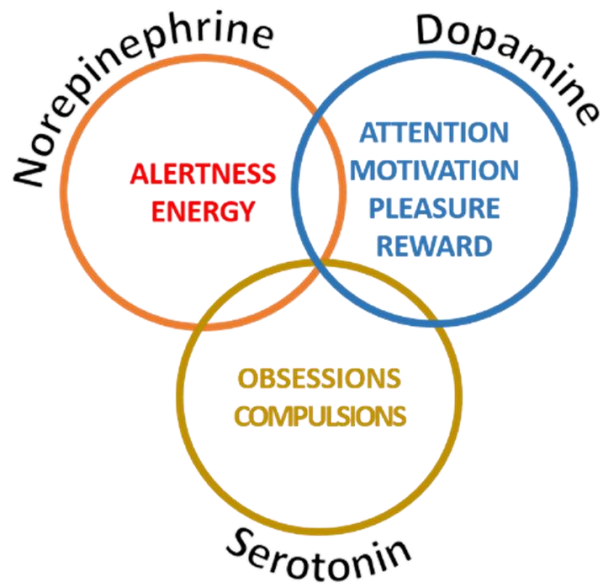
The American Psychological Association (2018) defines personality as the differences in characteristic patterns of thinking, feeling, and behaving. Based on this premise, it appears that norepinephrine influences human personalities and that the levels of this neurotransmitter are genetically predisposed.

The research study referenced above also stated that there is reciprocal activity between norepinephrine and serotonergic and dopaminergic systems, which refer to serotonin and dopamine production, respectively.

Based on this recent research, it appears that neuroscience, and more specifically the balance between three primary neurotransmitters, may be directly linked to differences in personality and behavioral profiles. If so, how do these profiles relate to the ancient Enneagram or more modern frameworks such as the OPQ-32? Also, how can human resource and corporate leaders leverage neuroscience-based profiling to create frameworks that improve talent acquisition, trust environments, morale, retention, and productivity?

As previously noted, many experts agree that neurotransmitters and chemicals modulate brain activity in predictable patterns and influence how humans act and interact with others. Three primary neurotransmitters that appear to be more involved with personalities than others are dopamine, serotonin, and norepinephrine (Thomas, 2016, pp. 173-178).

Dopamine is a basic modulator of attention, motivation, pain, and pleasure and regulates how we behave. Serotonin modulates obsession, compulsions, and psychological well-being and regulates how someone feels. Norepinephrine is involved with focused thinking, mental activity, alertness, and energy and regulates how someone thinks. Each neurotransmitter's production, or level, is either high, medium, or low. Apparent levels can also be determined by the length of a neurotransmitter's pathway in the brain. Neuron profiles are divided into three groups: logical, emotional, and instinctual.



(Illustration by authors)

Neuroscience-Based Personality Profiling

Many experts state that genetic predispositions may be factors that can cause low, medium, or high levels that can lead to certain disorders (Hariri et al., 2002, pp. 400-403). In his book, *The Edge Effect*, Dr. Eric Braverman (2004, pp. 18-26) shows how four main neurotransmitter or chemical levels in the brain can determine personality profiles. To validate this, he used a quantitative electroencephalogram (EEG) called BEAM (Brain Electrical Activity Mapping). Some skeptics question Braverman's research and even his credibility, but his studies appear thorough and match research conducted by two PhDs interviewed for this study.

Most neuroscientists and biologists concur that dopamine is an assertive "power" neurotransmitter that dominates the frontal lobe. Braverman found that those with high dopamine levels enjoy power, theories, language precision, and strategy.

GABA is found in the temporal lobe. Those with high “calming” GABA levels are more traditional and conventional, dependable and punctual, and organized and confident. GABA is an “inhibitory” neurotransmitter that can lower “excitatory” ones, most especially norepinephrine.

Norepinephrine makes a person more alert and ready for active body movement, which increases energy use. Its effect can be offset by GABA and acetylcholine, which act on most of the same organs to make someone more conducive to calmness, rest, recovery, and food digestion.

Acetylcholine is related to motor and memory functions and is produced in the parietal lobes. Braverman says that individuals with high levels are more creative, empathetic, authentic, and benevolent. As noted above, it can affect norepinephrine production. One study (Granneman, 2015) shows a direct connection from this chemical to introversion and extroversion. Introverts apparently have long acetylcholine pathways. For extroverts, it’s shorter. Visualize a hose pumping water into the brain. A person will not necessarily have a higher “level” of water with a longer hose, but it will take longer to fill up the brain. This may be why introverts can handle large crowds temporarily but eventually grow weary of them, whereas with extroverts, the opposite is true.

Serotonin is in the occipital lobe and is associated with delta waves. According to Braverman, those with high serotonin are playful, adventurous, optimistic, achievement-oriented, and have a positive mental attitude.

Assuming Braverman’s research is accurate, it could prove to be groundbreaking, but does it align with the ancient Enneagram?

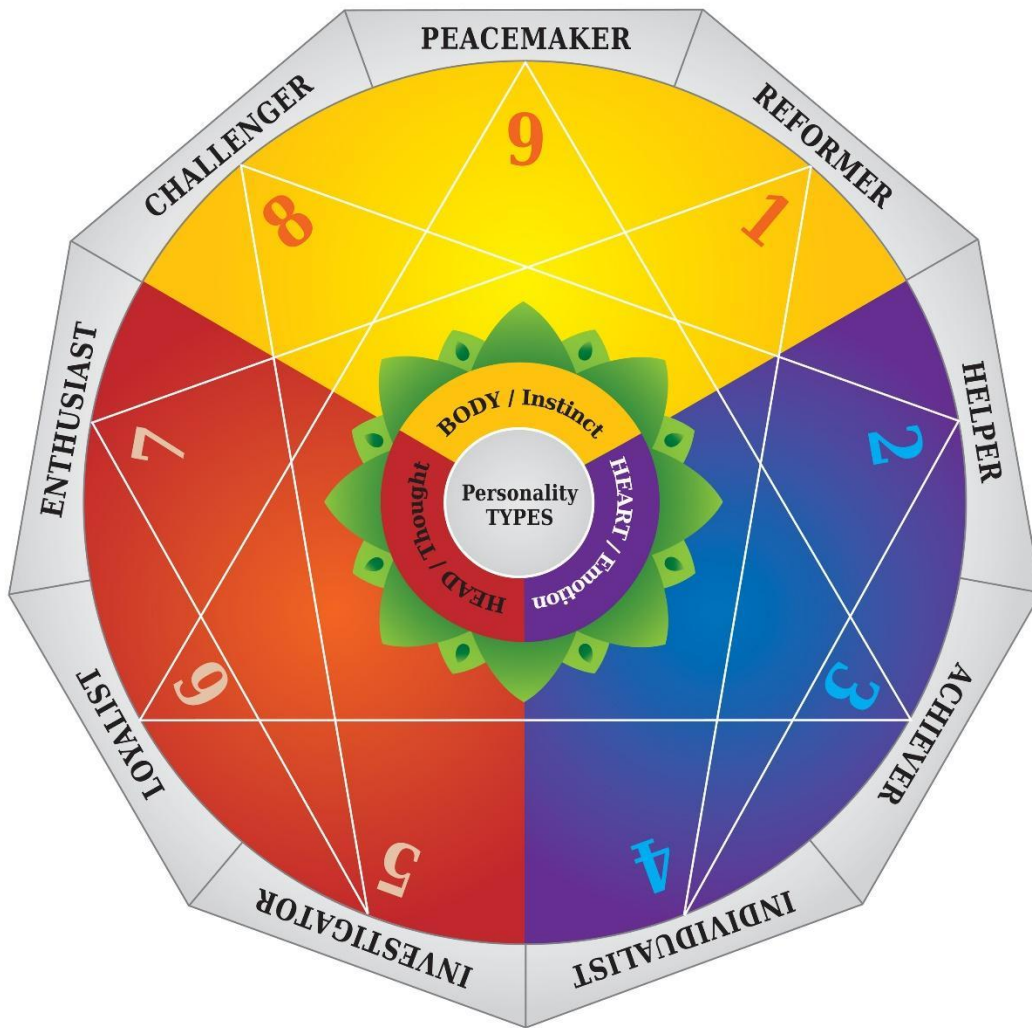
Noted earlier, Helen Fisher conducted studies to relate serotonin, dopamine, estrogen, and testosterone to personality traits. [Studies](#) show that estrogen promotes synthesis, prevents

degradation, and inhibits reuptake of serotonin. It also promotes the expression of serotonin receptors. Also, estrogen increases dopamine synthesis and decreases its degradation and reuptake. Obviously, Fisher discovered a connection between brain wiring and personality, but did not delve deeper understand how other neurotransmitters, such as norepinephrine and GABA, are more related to personalities than estrogen and testosterone.

Relating Neuroscience-Based Profiling to the Enneagram

Two renowned experts interviewed for this study, Dr. Eric S. Schulze and Dr. Tina Thomas, conducted extensive neuroscientific research studies similar to Braverman's. Dr. Thomas documented these findings in her book, *Who Do You Think You Are?: Understanding Your Personality From the Inside Out* (Thomas, 2016, pp. 18-26). These two Ph.Ds. discovered that the Enneagram's observational science can be explained by genetically determined high, medium, or low levels of dopamine, serotonin, and norepinephrine.

The ancient Enneagram's nine types are divided into three distinct groups of three personality types each. The three groups, or triads, can be defined as "head types" (more logical), "heart types" (more emotional), and "gut types" (more instinctual). Schulze and Thomas discovered that thinking group types appear to have high levels of norepinephrine activity and are generally mentally active. The instinctual types have relatively low norepinephrine activity, and the heart types have medium levels.



(Artellia, Dreamstime.com)

How does their research compare to Braverman’s work? A close examination reveals that they are quite compatible:

Schulze and Thomas found that norepinephrine regulates how quickly and how often a person thinks and solves problems. Thomas reports that “people who have a high set point of norep (norepinephrine) are people whose brain ‘engines’ are set at a high idle. They are almost always revved up and ready to think.” They also tend to speak quickly and may be perceived as

“high-strung” individuals. They may have difficulty “turning their brain off,” so sleeping soundly could be a challenge. People in this category are logical “head types.”

Those with low levels are referred to as the three instinctual “gut” personality types. They are more solid and steady, traditional and conventional, dependable and punctual, organized and confident, and “calm.” They rarely have a problem falling asleep. Recall that GABA is calming and throttles norepinephrine, and Braverman said that those with high levels have similar attributes. High GABA and low norepinephrine are essentially equivalent, so it appears that the two viewpoints are similar.

Schulze and Thomas determined that people with medium levels of norepinephrine fall into the emotional and feeling “heart” triad. They are “intermittent thinkers” and may cycle in and out of daydreaming. These types are also more creative, caring, and empathetic. Braverman said that those with high levels of acetylcholine are creative, empathetic, authentic, and benevolent. The effects of norepinephrine are offset by acetylcholine, so it’s quite possible that high levels of the latter will create medium levels of the former.

Braverman said that those with high levels of dopamine are assertive and enjoy power, precision, and strategy. Schulze and Thomas concurred. They showed high dopamine types as falling into the assertive triad and liking power, control, precise diction, and strategic goal setting. This is also in close alignment. Schulze and Thomas also noted that dopamine levels can dictate whether or not someone is more extroverted or introverted.

Schulze and Thomas showed high serotonin types as being in the “positive outlook” triad. Braverman said these individuals are playful, adventurous, and have positive orientations.

Summary

Based on the above research, it may be possible to conclude that:

1. Personality types are influenced by a small number of primary neurotransmitters and brain chemicals.
2. The levels (production) of norepinephrine and serotonin neurotransmitters are either high, medium, or low, which creates nine distinct personality types. Levels of dopamine and acetylcholine impact extroversion and introversion and create what is referred to as “wings,” meaning that someone may tend to have a few of the attributes of an adjacent personality type.
3. The nine types described by the ancient Enneagram align closely with the neurotransmitter studies done by leading researchers.
4. Recent research conducted by teams at the Academy of Management Perspectives and other renowned organizations validate that leadership communication approaches can impact emotional and logical coherence between brain centers.
5. The Enneagram aligns with validated personality profiling systems such as the OPQ32.

5. Overview of Validation Approach

The CQI (Career Quotient Indicator™) system was developed as a neuroscience-informed behavioral profiling framework intended to measure consistent and observable human tendencies. The validation of such a system requires more than simple correlation; it requires a demonstration that the assessment can reliably capture behavioral patterns, align those patterns with biological influences, and translate those findings into practical, real-world applications.

To establish this level of rigor, a multi-method validation framework was employed. This approach was designed to ensure both internal validity, meaning the accuracy and consistency of the measurement, and external validity, meaning its applicability across diverse populations and real-world environments.

The validation methodology focused on several core objectives:

- Demonstrating that CQI outputs align with independently observed behaviors
- Establishing correlations between CQI outputs and neurochemical indicators
- Verifying consistency across populations and environments
- Evaluating the system's ability to predict outcomes and inform interventions

In addition, with the expansion of CQI into AI workforce applications, the validation methodology was extended to assess the system's ability to predict behaviors associated with AI usage, including prompting quality, validation practices, and susceptibility to risk under stress.

Behavioral Validation Through Structured Interviews

The initial validation phase centered on structured behavioral interviews designed to independently assess participants without reliance on CQI outputs. These interviews followed standardized protocols to minimize bias and ensure consistency across evaluators.

Participants were evaluated across a range of behavioral dimensions, including communication style, decision-making patterns, stress response, and interpersonal tendencies. Interviewers were trained to identify observable behaviors and patterns rather than rely on subjective impressions.

Following the completion of interviews, results were compared to CQI-generated profiles. This comparison revealed a 91.3% alignment between CQI outputs and independently observed behaviors.

This high level of agreement provides strong evidence that the CQI system captures behavioral tendencies that are not only internally consistent but externally observable. Importantly, these behaviors are directly relevant to AI usage contexts. For example, communication patterns influence prompt construction, while decision-making tendencies affect how individuals evaluate AI outputs.

The structured interview validation demonstrates that CQI is capable of identifying behavioral traits that translate into predictable patterns of interaction with AI systems, particularly in areas such as trust, verification, and cognitive processing.

Comparative Assessment Validation

To further assess the robustness of the CQI system, its outputs were compared against established behavioral and personality assessments, including Myers-Briggs, DISC, and StrengthsFinder. The purpose of this comparison was not to replicate these models but to evaluate consistency in identifying broad behavioral tendencies while highlighting CQI's unique contributions.

The results showed a 76.7% correlation between CQI outputs and other assessments. While this level of alignment confirms that CQI is directionally consistent with widely accepted frameworks, it also underscores its differentiation.

Traditional assessments are largely descriptive and static. They categorize individuals based on observed traits but do not typically account for how those traits manifest under changing conditions such as stress, time pressure, or cognitive load. In contrast, CQI incorporates neuroscience-based constructs that enable it to model behavioral variability across different contexts.

This distinction becomes particularly important in AI-enabled environments, where individuals are frequently required to make rapid decisions, interpret complex outputs, and balance speed with accuracy. The ability to predict how behavior changes under these conditions provides a meaningful advantage over traditional assessment models.

Neurochemical Correlation Validation

A critical component of the CQI validation process involved establishing correlations between behavioral outputs and underlying neurochemical activity. While direct measurement of neurotransmitters in operational settings is not practical, controlled biological testing was conducted on a subset of participants to evaluate alignment.

Participants underwent testing that included urine analysis and hormonal profiling, which served as proxies for neurotransmitter activity. The focus was on key neurochemical systems associated with behavior, including dopamine, serotonin, and norepinephrine.

The results demonstrated strong alignment between CQI outputs and biological indicators:

- Serotonin Alignment: 87.4%

- Dopamine / Acetylcholine Alignment: 83.5%
- Norepinephrine Alignment: 89.6%

These findings support the conclusion that CQI captures behavioral tendencies that are grounded in measurable biological processes. This provides a scientific basis for the system and differentiates it from purely observational or self-reported models.

In the context of AI usage, these neurochemical influences have direct implications. Dopamine-related tendencies influence experimentation and tool adoption, serotonin influences governance adherence, and norepinephrine contributes to analytical evaluation and error detection. The ability to map these influences to behavior enables CQI to function as a predictive tool for AI interaction patterns.

Large-Scale Field Validation

The CQI system was further validated through large-scale deployments across diverse populations and organizational contexts. One of the most significant implementations occurred within the Kollab Youth workforce development program, where more than 2,000 participants completed the assessment.

Participants were asked to evaluate the accuracy of their CQI reports. The results showed a 92.5% validation rate, indicating strong alignment between the assessment outputs and participants' self-perceived behaviors.

In addition to this large-scale validation, CQI was applied within enterprise mentoring and apprenticeship programs involving professionals from organizations such as Cisco, Wells Fargo, Alaska Airlines, and Enterprise Rent-a-Car. In these environments, both participants and program leaders evaluated the usefulness and accuracy of CQI outputs.

The results demonstrated a 93% validation rate among enterprise users. Reports were consistently described as actionable and relevant, particularly in guiding development, mentoring, and performance improvement. Additional studies have been conducted across thousands of individuals at several organizations including Better Homes and Gardens Real Estate, OB Hospitalist Group, Global Tax Network, Mitel, R+L Carriers, Aventi Group, Qualys, Teracloud, and others with similar outcomes, statistics, and results.

These findings confirm that CQI maintains high validity across different populations, age groups, and organizational contexts, supporting its scalability for enterprise applications.

Outcome-Based Validation

Beyond behavioral accuracy, the effectiveness of the CQI system was evaluated through its impact on measurable organizational outcomes. This phase of validation focused on determining whether insights derived from CQI could be translated into tangible improvements in performance, engagement, and well-being.

Across multiple deployments, organizations reported significant improvements, including:

- Up To 400% Improvement In Performance Metrics
- 74% Reduction In Stress Indicators
- 106% Increase In Energy And Engagement
- 88% Improvement In Customer Outcomes

These results indicate that CQI is not only descriptive but also prescriptive. By identifying behavioral patterns and their underlying drivers, organizations can implement targeted interventions that lead to measurable improvements.

In AI-enabled environments, these improvements translate directly into enhanced outcomes, including better prompt quality, more accurate outputs, and reduced error rates.

Validation for AI Behavioral Risk and Readiness

With the increasing importance of AI in enterprise environments, the validation methodology was extended to assess CQI's applicability to AI-specific behaviors. This involved analyzing the relationship between CQI attributes and observed patterns of AI usage.

The analysis focused on several key areas:

- Prompting effectiveness
- Validation and verification behaviors
- Trust in AI-generated outputs, the use of AI, and teammates
- Responses to workload pressure

Findings indicate that CQI variables are strongly predictive of these behaviors.

Individuals with higher trust scores are more likely to accept AI outputs without verification, while those with elevated stress levels are more likely to rely on shortcuts and reduce validation efforts. Communication and analytical capabilities were found to directly influence prompt quality and output accuracy.

These findings align with recent research showing that users often overestimate the reliability of AI outputs, particularly when those outputs are presented with high confidence. Additionally, studies indicate that cognitive load and stress reduce the likelihood of critical evaluation, increasing the risk of error propagation.

The integration of CQI with AI behavioral analysis provides organizations with a framework for identifying not only whether employees are using AI, but how they are using it and where risks may arise.

Reliability and Consistency

Reliability testing was conducted through repeated assessments and cross-cohort comparisons. The results indicate that CQI outputs are stable over time when underlying conditions remain consistent, while also being sensitive to meaningful changes in behavior.

This balance between stability and adaptability is critical for enterprise applications. It ensures that the assessment provides reliable baseline measurements while remaining responsive to interventions such as training and coaching.

Summary of Validation Methodology

The validation methodology demonstrates that the CQI system is both scientifically grounded and operationally effective. Through a combination of behavioral validation, biological correlation, large-scale deployment, and outcome-based measurement, CQI has been shown to provide accurate, consistent, and actionable insights.

Importantly, the extension of this methodology into AI contexts confirms that CQI can be used to predict and improve human interaction with AI systems. This capability addresses a critical gap in current AI readiness models, which often overlook the behavioral factors that ultimately determine success or failure.

Conclusion of Validation Chapter

The evidence presented in this chapter supports the conclusion that the CQI system is a validated and reliable framework for measuring behavioral tendencies and their impact on performance.

In the context of modern enterprise environments, where AI plays an increasingly central role, this capability is particularly significant.

CQI does not simply measure behavior.

It provides a scientifically grounded method to predict how that behavior will influence outcomes in AI-enabled work.

6. Validation of the CQI profiling alignment

Correlations between primary neurotransmitters and brain chemicals and personality and “brain type” profile testing

Across more than a decade of projects completed for such clients as Adobe, Avnet, Arrow, Booz Allen Hamilton, Blackberry, Cisco, HP, Logicalis, LogMeIn, Oracle, SAP, Symantec, Visa, and many others, thousands of individuals completed various versions of the CraniumQuiz™ test to create various versions of the CareerQuotient. Additionally, the ENGAGE86 app extension for Google Chrome and Microsoft Edge browsers was used to analyze LinkedIn profiles and determine CraniumQuotient results. Hundreds of individuals wherein profiles were determined subsequently engaged with researchers on video or audio calls or in live meetings. Researchers queried these individuals to validate personality and other test findings. Final results indicated the following:

- 91.3% match with full CQI results based on subject interviews
- 76.7% match with RemotleyMe profiling app results based on subject interviews

Study details and validation are provided in the Index section.

The ZRT Laboratory neurotransmitter urine kit includes measurements for the following:

- NeuroAdvanced Profile – GABA, Glu, Gly, DA, Epi, NE, HIST, 5-HT, PEA, DOPAC, HVA, 5-HIAA, NMN, VMA Trp, Kyn, 3-OHkyn, Tau, Gln, His, N-MeHist, Tyra, KynAc, Xanth, Tyr & Crtn (Sample Report)
- Optional add-ons:
- Saliva Hormones add-on – E2, Pg, T, DS & C
- Urine Hormones add-on – E2, Pregnanediol, Allopregnanolone, Androstenedione, T, Epi-T, DHT, DHEA, & 5 α ,3 α -Androstenediol

- Diurnal Cortisol add-on – Free Cortisol x 4 & Free Cortisone x 4
- Diurnal Cortisol & Melatonin add-on – Free Cortisol x 4, Free Cortisone x 4 & Melatonin (MT6s) x 4
- Diurnal Cortisol, Norepinephrine & Epinephrine add-on – Free Cortisol x 4, Free Cortisone x 4, NE x 4 & Epi x 4
- Diurnal Cortisol, Melatonin, Norepinephrine & Epinephrine add-on – Free Cortisol x 4, Free Cortisone x 4, Melatonin (MT6s) x 4, NE x 4 & Epi x 4
- Urine Toxic & Essential Elements add-on – I, Se, Br, Li, As, Cd & Hg

Based on urine tests with dozens of individuals, researchers determined the following results:

- 87.4% match for serotonin levels in individuals determined by CQI tests to be in the high serotonin category.
- 83.5% match for dopamine and acetylcholine levels in individuals determined by CQI tests to be introverted (high acetylcholine) or extroverted (high dopamine) categories.
- 89.6% match for norepinephrine levels in individuals determined by CQI tests to be in the high norepinephrine category.

CQI Assessment System™

Studies and research conducted by leading experts and neuroscientists have revealed the following:

- Most personality and professional assessment tests consist of 40 to 100+ “either/or” or similar text or word-based questions

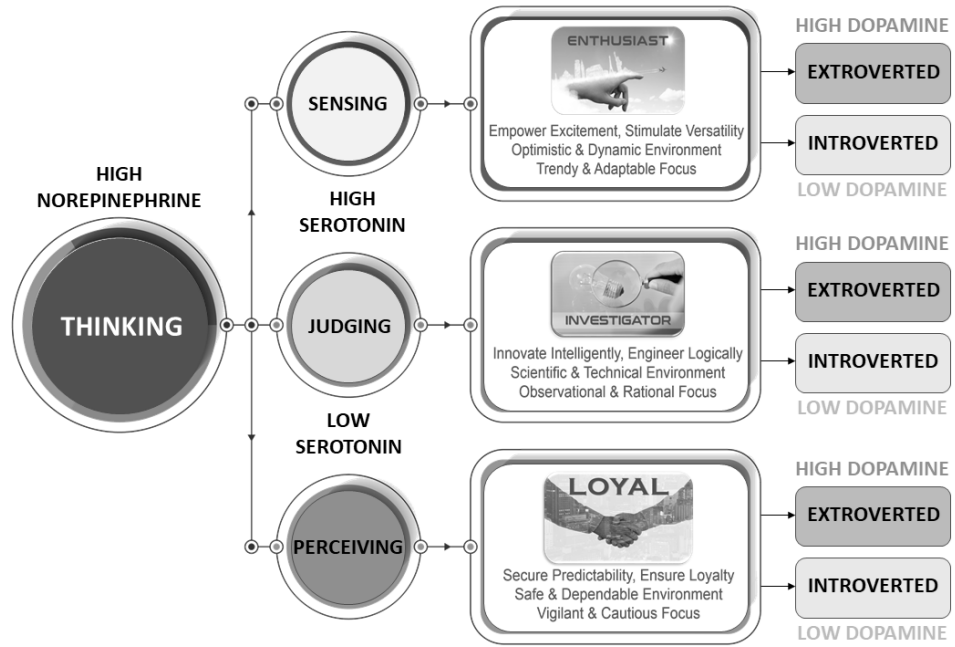
- These tests average 30 to 60 minutes in length
- Text and word-based profiling tests appeal to only 10 percent of decision-making brain areas
- Given test length and lower attention appeal, these tests have a 70 percent non-completion rate
- Due to the above issues, accuracy for these tests have been questioned by leading psychologists

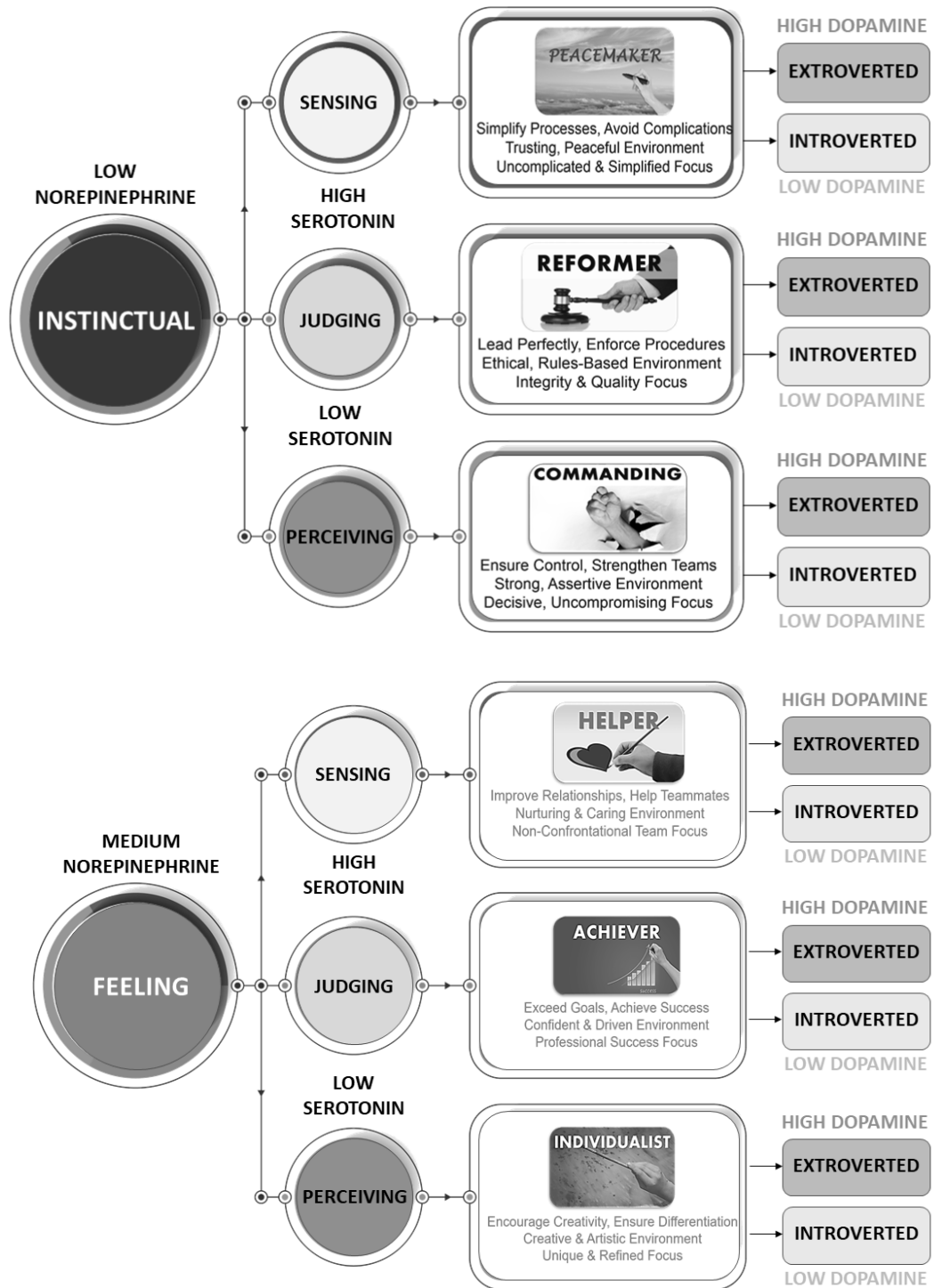
The London School of Business and other studies have validated a 1400 percent increase in retention and attention for visual storytelling content as compared to text or word-based content.

Therefore, a new profiling model is needed that transcends inaccurate word and text-based tests that does for visual assessments what Zoom did for visual communications. This new model needs to equate neurotransmitter and brain chemical setpoints or sensitivities to personalities, tendencies, attributes, strengths, weaknesses, soft skills, and trust factors. Moreover, the assessment needs to be short, preferably less than 10 minutes in length, and use visual elements such as video.

The CQI System is designed to accomplish this with a proven nine minute video and graphic-based assessment that uses visual elements to determine levels of dopamine, acetylcholine, serotonin, norepinephrine, oxytocin, and GABA. The system is designed to equate visual responses to setpoints and sensitivities based on scientifically research and studies, as noted earlier, that validate effects for these neurotransmitters and brain chemicals on the brain. In turn, given the brain effects, the system shows a direct link between brain impact and personalities, tendencies, attributes, strengths, weaknesses, soft skills, and trust factors.

The below graphics illustrate how this model is designed.





As shown, high norepinephrine types have more neocortex stimulation and dominance, and are therefore more logical, analytical, and thinking types. If they also have high serotonin,

they will be more sensitive in nature. If medium, more judging, and if low, more perceiving. The model provides details for each type based on this overview. Any type with high dopamine will be more extroverted, and with high acetylcholine will be more introverted.

Those with low norepinephrine will be more instinctual, wherein the R-complex part of the brain becomes more dominant. Serotonin levels will have similar effects as for logical types. Those with medium norepinephrine will be driven more by emotional factors, and will also have similar profiles based on serotonin levels.

For all types, as validated by neuroscientific and professional development studies, oxytocin is directly related to trust factors. Individuals with low oxytocin may have difficulty trusting or functioning in a high-trust environment, and vice versa.

7. Assessment Legalities

Regardless of the approach implemented, human resources professionals and executives should be concerned with the legality of pre-employment tests and assessments. The Equal Employment Opportunity Commission (EEOC) outlines guidelines related to proper and improper questions that can be asked. According to leading employment [law firms](#), it is legal for an employer to require a test or assessment prior to offering candidates employment. Any test or assessment, however, must adhere to specific professional standards that include having an appropriate intended use. Otherwise, the test or assessment could be discriminatory and may not be legal or valid. The EEOC defines discrimination mistreating someone unfairly who is in a protected class, such as:

- Race or nationality
- Sex or gender
- Sexual orientation
- Pregnancy
- Religion
- Age or disability

A pre-employment assessment asking questions about these protected areas that aren't relevant to the position (age, disabilities, etc.) may not be legal. The EEOC does not permit employers to ask such questions prior to hiring, whether during interviews or pre-employment testing. If a test assesses personality traits, aptitudes, attributes, tendencies, soft skills, trust factors, etc. without using discriminatory questions, most legal professionals agree that employers are legally held harmless.

The CQI system is designed to comply with all EEOC and other compliance requirements and has been reviewed by a leading employment attorney to ensure compliance.

The rapid adoption of artificial intelligence within enterprise environments has been accompanied by increased regulatory scrutiny and legal risk, particularly in areas involving employee assessment, hiring, and decision-making. As organizations deploy AI-enabled tools and behavioral assessments to improve productivity and manage risk, they must ensure that these tools are legally defensible, non-discriminatory, transparent, and aligned with emerging regulatory frameworks.

The CQI system, as a neuroscience-based behavioral assessment, must therefore be evaluated not only for scientific validity but also for compliance with employment law, data protection standards, and AI governance regulations.

This section examines the legal positioning of the CQI system in light of:

- NYC Local Law 144 governing automated employment decision tools
- Emerging California AI regulatory frameworks
- Recent litigation involving AI-based assessments, including the Eightfold case
- Established U.S. employment law principles, including EEOC guidance and FCRA requirements

Regulatory Landscape for AI and Employee Assessment

NYC Local Law 144

New York City Local Law 144 represents one of the first comprehensive regulatory efforts to address the use of automated decision-making tools in employment contexts. The law requires that any automated employment decision tool (AEDT) used for hiring or promotion be subject to:

- Bias audits conducted by independent third parties
- Public disclosure of audit results
- Transparency regarding the use of such tools

The law defines AEDTs broadly as computational processes that assist or replace discretionary decision-making in employment decisions.

From a legal standpoint, the critical issues raised by Local Law 144 include:

- Whether a tool materially influences employment decisions
- Whether the tool produces outputs that may result in disparate impact
- Whether the methodology is explainable and auditable

California AI Regulatory Developments

California has introduced and continues to develop legislation addressing AI transparency, accountability, and risk management. While not yet fully consolidated into a single statute comparable to Local Law 144, these efforts emphasize:

- Transparency in AI system usage
- Accountability for outcomes produced by AI-assisted decision-making
- Protection against discrimination and unfair practices

California's regulatory direction aligns with broader federal and international trends, including the NIST AI Risk Management Framework, which emphasizes:

- Governability
- Transparency
- Fairness
- Accountability

Recent Litigation: The Eightfold Case

Recent legal challenges, including a class action lawsuit involving Eightfold AI, highlight the risks associated with using AI systems to evaluate or score job applicants. The lawsuit raises questions regarding compliance with the Fair Credit Reporting Act (FCRA), particularly in situations where:

- AI systems generate scores or rankings used in employment decisions
- Individuals are not adequately informed of the use of such systems
- Outputs are not transparent or explainable

The case underscores several key legal risks:

- The use of opaque or “black box” models
- Lack of disclosure to affected individuals
- Potential inaccuracies in automated scoring
- Use of AI outputs as determinative rather than advisory

These risks are directly relevant to any organization deploying AI-driven or AI-adjacent assessment tools.

Legal Classification of the CQI Assessment System

A central question in evaluating legal risk is whether the CQI system qualifies as an automated decision-making tool under applicable regulations.

The CQI system is designed as a behavioral assessment and diagnostic tool, not as an automated decision-making system. It does not:

- Generate hiring decisions (human-in-the-loop is required for all decisions)
- Rank or score candidates for employment selection
 - The system does provide scores for candidate attributes such as trust, soft skills, etc. but does not relate this to employment selection

- Operate as a black-box algorithm producing opaque outputs

Instead, CQI provides:

- Descriptive and predictive insights into behavioral tendencies and candidate attributes
- Transparent, explainable reports and metrics
- Decision-support information for training, development, interviewing, and risk management

As such, CQI is more appropriately classified as a human-centered assessment tool, rather than an automated decision system. Furthermore, AI is not used in the assessment process, and is only used to analyze and summarize the information gathered.

Compliance with Employment Law and EEOC Guidelines

Non-Discriminatory Design

A fundamental requirement under U.S. employment law is that assessment tools must not result in unlawful discrimination or disparate impact on protected classes.

The CQI system is designed to comply with these requirements by:

- Avoiding the use of protected characteristics such as race, gender, age, or ethnicity
- Focusing exclusively on behavioral and cognitive attributes that are job-relevant
- Providing consistent measurement across individuals

Because CQI measures traits such as communication, stress response, and decision-making tendencies, soft skills, etc., its outputs are directly related to workplace performance rather than demographic factors.

Job Relevance and Business Necessity

Under EEOC guidelines, employment assessments must be demonstrably related to job performance and business necessity.

The CQI framework meets this criterion by linking behavioral traits to:

- Productivity outcomes
- Decision-making quality
- Communication and other soft skill effectiveness
- Risk management behaviors

In AI-enabled environments, these traits are particularly relevant, as they influence:

- Prompt quality
- Validation of AI outputs
- Adherence to governance policies

This alignment supports the argument that CQI assessments are both job-relevant and necessary for modern enterprise operations.

Transparency and Explainability

Legal scrutiny of AI systems has increasingly focused on explainability. Tools that produce outputs without clear rationale are more likely to face regulatory and legal challenges.

The CQI system addresses this concern by:

- Providing transparent explanations of results
- Linking outputs to observable behaviors
- Avoiding opaque algorithmic processes

Users can understand how their results are derived and how they relate to their behavior, reducing the risk associated with black-box systems.

Alignment with FCRA and Risk Mitigation

The Fair Credit Reporting Act (FCRA) governs the use of consumer reports in employment decisions. Legal challenges, such as the Eightfold case, have highlighted risks associated with AI-generated scoring systems that may be interpreted as consumer reports.

The CQI system mitigates FCRA-related risk through several key design principles:

- It does not generate credit-like scores or rankings
- It does not aggregate third-party data
- It does not operate as a background screening tool
- It does not make or automate employment decisions

Instead, CQI functions as a self-assessment and development tool, used to inform training, coaching, and workforce readiness initiatives.

To further reduce risk, organizations implementing CQI should ensure:

- Clear disclosure of assessment purpose
- Informed consent from participants
- Appropriate use of results in non-decisional contexts

AI-Specific Legal Considerations

Human-in-the-Loop Requirement

Regulatory frameworks increasingly emphasize the importance of maintaining human oversight in AI-related processes.

The CQI system inherently supports this requirement by:

- Providing decision-support insights rather than automated decisions
- Requiring human interpretation and application of results
- Enabling coaching and development rather than replacement of human judgment

Risk of Overreliance on AI Outputs

Recent research has demonstrated that individuals often overtrust AI systems, particularly when outputs are presented with high confidence. This behavioral tendency introduces legal and operational risks, including:

- Reliance on incorrect or misleading information
- Failure to detect errors or bias
- Propagation of inaccurate outputs

The CQI framework addresses this risk by measuring trust-related tendencies and identifying individuals who may be more susceptible to overreliance. This enables organizations to implement targeted interventions that reduce risk exposure.

Data Privacy and Security Considerations

The use of behavioral assessments requires careful attention to data privacy and security. The CQI system is designed to minimize risk by:

- Collecting only necessary behavioral data
- Avoiding sensitive personal or demographic information
- Supporting secure data handling practices

Organizations implementing CQI should align with applicable data protection standards, including:

- Internal security policies
- Industry best practices
- Relevant state and federal regulations

Practical Implementation Guidelines for Compliance

To ensure legal defensibility, organizations deploying the CQI system should adhere to the following principles:

- Ensure the assessment is used for development, training, and risk management purposes
- Avoid using CQI outputs as the sole basis for employment decisions
- Provide clear communication to participants regarding the purpose and use of the assessment
- Maintain documentation supporting job relevance and business necessity
- Incorporate human oversight in interpreting and applying results

These practices align with both current regulatory expectations and emerging legal standards.

Summary of Legal Position

The CQI system is designed to operate within a legal framework that prioritizes:

- Transparency
- Fairness
- Accountability
- Human oversight
- Partial AI usage for employment not automated for decision making

Its focus on behavioral and neuroscience-based insights, rather than automated decision-making, distinguishes it from AI systems that are currently subject to heightened regulatory scrutiny.

Conclusion of Legal Analysis

The evolving legal landscape surrounding AI and workforce assessment reflects a broader shift toward accountability and transparency in decision-making systems. Tools that operate as opaque, automated decision-makers are increasingly subject to challenge, as demonstrated by recent litigation and regulatory action.

In contrast, the CQI system provides a human-centered, explainable, and scientifically grounded approach to behavioral assessment. When implemented in accordance with established guidelines, it offers a legally defensible method for:

- Assessing workforce readiness
- Identifying behavioral risk factors
- Supporting training and development initiatives

Ultimately, the CQI framework aligns with the direction of modern regulation by emphasizing that:

Effective AI governance requires not only control of technology, but also understanding and management of human behavior.

8. Effective Neuroscientific Leadership Implementation

As noted previously, many neuroscientists believe that personalities, attributes, and tendencies are related to three primary neurotransmitters that modulate brain activity in predictable patterns and influence how humans act and react to the world. Again, these neurotransmitters are norepinephrine, serotonin, and dopamine. Counter or related to these are GABA, oxytocin, and acetylcholine.

Someone's neurotransmitter chemical levels and/or sensitivities are either high, medium, or low, and if the levels are out of balance, a person can become psychologically or physically unhealthy. For example, a serotonin deficiency can cause migraine headaches, nausea, appetite issues, depression, and anxiety. Something as simple as drinking too much coffee can affect dopamine levels and make someone irritable. Conversely, as previously noted, Dr. Paul Zak and others have shown that effectively raising oxytocin levels can increase trust and therefore employee satisfaction and productivity.

A Model Implementation Plan to Improve Recruiting, Morale, and Productivity

Dr. Paul Zak (2017) conducted experiments showing the connection between raising oxytocin levels and increasing trust in work environments. He offered eight management behaviors that foster trust that are measurable and can be managed to improve employee performance:

1. Recognize Excellence—publicly reward top performers
2. Induce “Challenge Stress”—create moderate job stress via attainable goals
3. Ensure Work Autonomy—trust workers to complete projects in their own way
4. Enable Job Freedom—allow people to select the most rewarding projects
5. Share Company Information—a well-informed employee is a happier employee

6. Build Relationships—less task-orientation and more relationship-orientation
7. Encourage Wellness—facilitate personal growth along with professional growth
8. Show Vulnerability—leaders should ask for help to encourage cooperation

As noted by SHRM experts and studies completed by Gallup and leading neuroscientists, high-trust organizations result in dramatically higher productivity, energy, profits, and revenue. Also, dramatically lower stress and absenteeism. Therefore, the ability to screen and assess candidates for recruitment and talent acquisition to determine approximate levels of oxytocin—validated by experts as an accurate trust factor measurement—can ensure employees who can trust and be trusted in a high-trust environment. Also, implementing employee engagement and professional development programs to increase workplace oxytocin levels will drive the results desired.

Furthermore, such a system will provide far more accurate results for soft skill evaluations as compared to observational profiling systems such as Predictive Index, et al. SHRM studies show that 92 percent of recruiters concur that when candidates fail in a new job, it is primarily due to improper matching of soft skills with job requirements and company culture. Furthermore, ensuring proper team fit can be crucial. For example, an individual with rigid right/wrong rules-based attributes were clash with more creative non-rules-based individuals. Strong controlling types may clash with more peaceful types, and so on. Conversely, too many individuals of the same profile type on a team could result in “group think” that may drive undesired results.

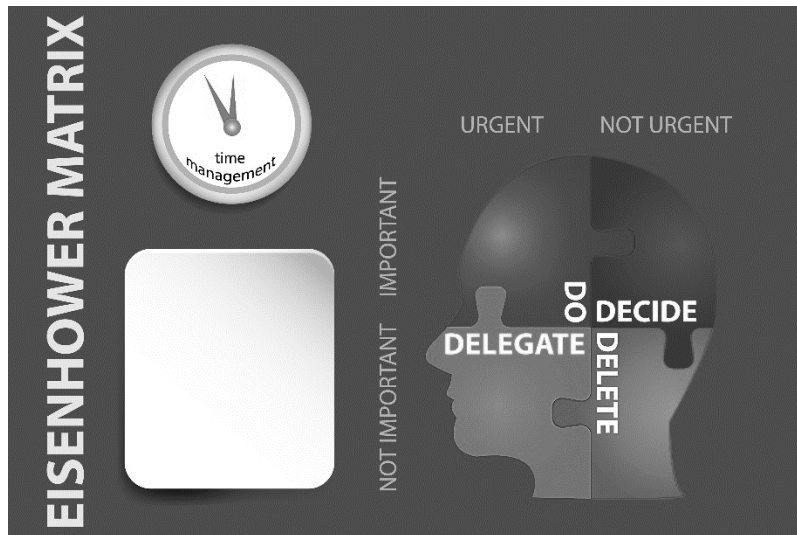
A system based on validate brain science to screen and assess individuals prior to hiring, and then ensure proper team complements and balance, and further create an environment of

trust, can drive the results noted by numerous studies: 106 percent more energy, 74 percent higher productivity, 20 percent higher revenue and profit, and 76 percent less stress.

The Development of a Neuroscience-Based Leadership Priority Planner

The Seven Habits of Highly Effective People, by Steven R. Covey, popularized a matrix grid with four quadrants called the Time Management Grids. This matrix was created by President Dwight D. Eisenhower (Clear, 2014), who once said, “What is important is seldom urgent and what is urgent is seldom important.”

Eisenhower placed tasks or projects that were urgent and important in the upper left quadrant of the matrix for immediate action. Items that were not urgent or important went into the upper right quadrant for further decision. Not important but urgent items went in the lower left for delegation, and not urgent and not important items went in the lower right for deletion.



(Jaroslav Frank, Dreamstime.com)

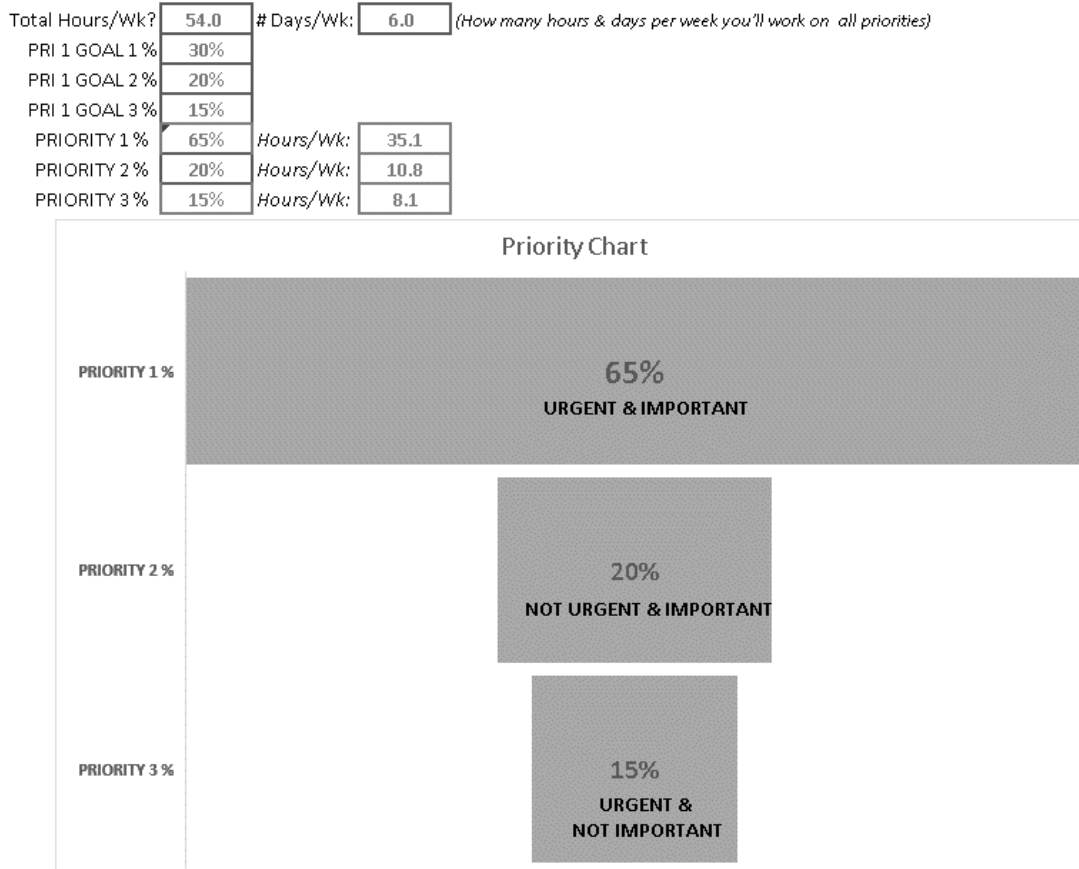
This grid provides a simplified means to keep leadership priorities straight. However, Eisenhower created this grid decades before modern neuroscientists had a more mature

understanding of how the human brain works. In today's dynamic and hectic world, leaders may need a better way to simplify projects and tasks and prioritize time.

Using a more neuroscientific approach to leadership decision-making, leaders might consider using three boxes to represent priority one, two, and three goals. Goal 1 is the most important goal required to accomplish a leader's purpose, vision, or mission identified for the organization, department, or team. This is similar to Eisenhower's urgent and important grid. Goal 2 is the second most important goal to reach this objective, which is similar to the not urgent and important grid. Goal 3 is similar to the urgent and not important grid. There is no box for not urgent and not important, as it is not needed.

Leaders can then decide what percentage of team time will be devoted to each goal. Those with Lean and Six Sigma expertise often discuss the 80/20 Pareto principle, wherein 80 percent of the effects come from 20 percent of the causes. Translated for time management purposes, 80 percent of a team's time should be spent on 20 percent of the projects or tasks—those which will gain 80 percent of the objective.

A leader might assign 60 to 65 percent of a team's time to Goal 1, around 20 percent for Goal 2, and 15 to 20 percent for Goal 3. Note that goals 1 and 2 add up to about 80 percent, which aligns with the Pareto principle.



(Illustration created by the author)

The Development of a Neuroscience-Based Leadership Decision-Making Model

Psychologists and neuroscientists are beginning to understand what happens in the human mind (mental activity) and the brain (the physical region associated with the activity) when someone is required to make a decision (Schwartz, J. & Thomson, J., 2016). Making decisions and forming habits is influenced by neuroplasticity principles discovered by Canadian scientist Donald Hebb in the 1950s. He created Hebb’s law to summarize his findings: “Neurons that fire together wire together.” Regions of the brain that are frequently activated in tandem will become physically associated with each another over time. The more often a mental activity pattern of

mental activity occurs, the more engrained the associated neural pathway becomes within the brain. Similar to a path that becomes worn through a forest by a continued use, it becomes easier for the brain to traverse well-used neural pathways. This implies that the more one makes similar decisions, the more the brain's neural pathways will become accustomed to these types of decisions, making the decision-making task more automated over time.

Aristotle's persuasion model, as discussed in Chapter One (Aristotle, 1992), suggests that humans need to engage all three parts of someone's brain to persuade them. Making a decision also requires persuasion. Leaders may need to persuade themselves that they are making the right and best decisions and then persuade their teams to execute those decisions. The triune brain neuroscientific research noted earlier, as well as Aristotle's persuasion model, intimates that persuasion requires engaging all three areas of the human brain—logical, emotional, and instinctual.

To accomplish this with teams, leaders might draw three vertical lines on a whiteboard, a PowerPoint slide, or other visual aid to create three columns. They can label the first column "emotional," the second "instinctual," and the third "logical." In the emotional column, they should create purpose and passion statements that are emotional in nature, such as, "Our overarching purpose is to bring joy to millions of people by allowing them to connect and communicate easier with our solutions."

They can then do the same in the instinctual column. They might write, "Our passion is to help our customers avoid risks and harm via solutions that offer greater security." Finally, they can list logical statements, such as, "Our goal is to provide affordable ways to connect with solutions that are 50 percent more efficient than any others."

When making major decisions, leaders can place the document in a prominent location. They can then encourage brainstorming sessions with their team and list all decision ideas or points on a whiteboard. Once there are several decision points on the board, the team can examine each one against the backdrop of the firm's passion, purpose, and vision. They can then narrow the decision choices down to three finalists to simplify the process.

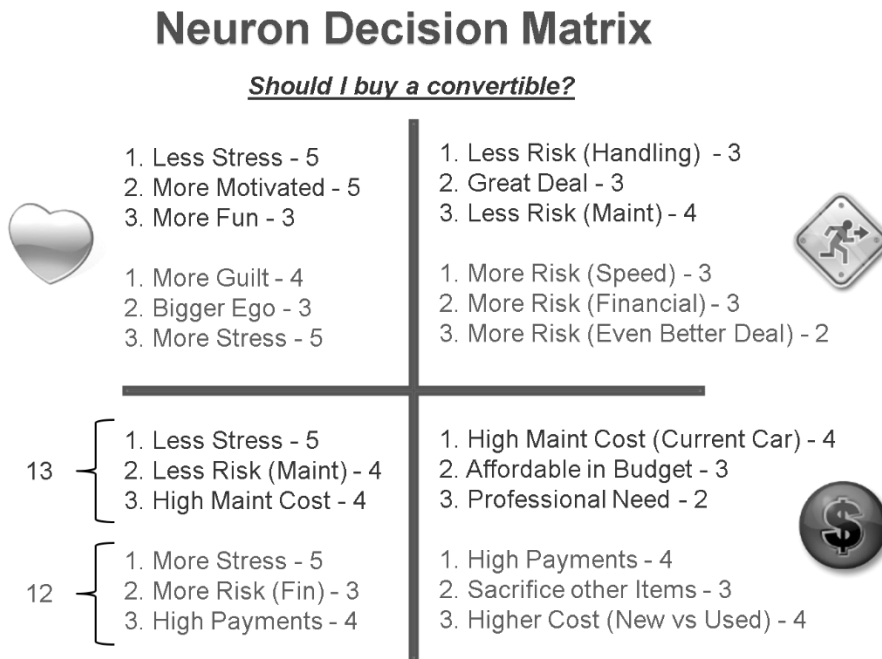
Now, leaders can draw two intersecting lines on the board, one vertical and one horizontal, to create four equal quadrants. They can label the upper left quadrant "emotional," the upper right one "instinctual," the lower right one "logical," and the lower left one "summary."

The team can examine decision possibility number one, and in the upper left quadrant, list three emotional reasons why this decision is a good one (fulfills the firm's purpose) and three reasons why it's bad. They can do the same for the instinctual and logical quadrants. The object of the exercise is to engage all three parts of everyone's brain to make more balanced decisions. Once the team has listed three good and bad reasons in each quadrant, they can rank each with a number between one and five, with five as the most important. For example, if reason number one resonates strongly (i.e., it aligns well with the passion and purpose), then the team can rate it as a five. They can use negative numbers for the three reasons they should not make this decision.

Once all the reasons have been scored, the team can select the most important "should do it" and "should not do it" reasons from each quadrant and place them in the fourth bottom left quadrant. Then, they can add up the positive numbers for the three "should do it" reasons and compare it to the sum of the negative "should not do it" numbers. If the "should do it" number is

higher, they may consider that course of action. If not, they can eliminate that option and re-evaluate.

In the visual example below, the decision to buy a convertible automobile or not is used. Some of the “should do it” reasons include less stress, less repair risk, and high maintenance costs for the current car. One can compare those against the “should not” reasons of more stress, more financial risk, and higher payments. In this example, the “should” reasons won so the decision-maker should buy the convertible.



(Illustration created by the authors)

Summary

While neuroscientific studies and research are still nascent, and information relevant to its adaptation for a leadership frameworks is virtually non-existent, there are studies, books, papers, and research reports that leaders can leverage to create usable leadership strategies, frameworks, and models. Employing strategies to increase oxytocin to increase workplace trust

and increase dopamine to improve well-being and job satisfaction have been shown to have positive and profitable results.

Using neuroscientific information to create models to make more effective decisions and better prioritize goals and time focus are two additional strategies that leaders can employ to improve productivity, attain organizational goals, and increase profitability.

9. Field Analysis for Implementation

To determine the potential effectiveness of the neuroscientific profiling implementation plan and proposed elements, qualitative research was conducted on nine professional leaders using a qualitative data narrative analysis technique.

Qualitative data refers to non-numeric information, such as interview transcripts, notes, video and audio recordings, images, and text documents. Qualitative data analysis can be divided into the following five categories:

1. Content analysis. This refers to the process of categorizing verbal or behavioral data to classify, summarize and tabulate the data.

2. Narrative analysis. This method involves the reformulation of stories presented by respondents, taking into account context of each case and different experiences of each respondent. In other words, narrative analysis is the revision of primary qualitative data by the researcher.

3. Discourse analysis. A method of analyzing naturally occurring speech and all types of written text.

4. Framework analysis. This is more advanced method that consists of several stages, such as familiarization, identifying a thematic framework, coding, charting, mapping, and interpretation.

5. Grounded theory. This method of qualitative data analysis starts with an analysis of a single case to formulate a theory. Then, additional cases are examined to see if they contribute to the theory.

For the purposes of this study, narrative analysis was selected, using interview transcripts from recordings of interviews with the nine professional leaders. Leaders were selected based

upon work title and current team size, with ten or more subordinates as the minimum number to qualify for the research study. Guidelines for participant selection are below.

Narrative Analysis Goals and Strategies

The purpose of the proposed study is to develop a usable and simplified framework and implementation plan to utilize recent neuroscience research related to business productivity and moral enhancement. The study will propose using a new approach to personality profiling based on modern neuroscience rather than the observation models of the past, including the OPQ-32, Myers-Briggs, the Big-5, DiSC, and the Enneagram profiling models. Ideally, the potential wide range of applications could enhance employee job satisfaction and improve productivity by adapting leadership skills to the employee's neuroscientific profile. Furthermore, identification of a leader's neuroscientific profile can enhance the ability to adjust the leadership style used based upon the leadership situation and the subordinate's identified profile.

Decades ago, leadership researchers analyzed the difference between introverted and extroverted managers, which led to research on specific leadership behaviors (Hersey & Blanchard, 1969, pp. 26-34). Researchers labeled leaders as either task-oriented or relationship-oriented leaders. Task-oriented leaders were believed to be more introverted and focused on getting the job done, completing tasks, or achieving goals. These leaders exhibit modest concern for employee relationships and place more emphasis on achievements, organization, and structure. The upside noted is higher productivity, but at the cost of morale, which can eventually affect productivity.

Relationship-oriented leaders were viewed as more extroverted and focused on people, relationships, teams, motivation, and support. They encourage collaboration and frequent communication and emphasize employee well-being and happiness. They understand that

reducing workplace conflicts and stress can lead to higher productivity. The upside is higher morale and job satisfaction but sometimes at the expense of productivity and profitability.

Management theorists from Ohio State University and the University of Michigan published a series of studies in the 1950s that sought to answer the question of which leadership style might be more effective (Chong, 2017). They discovered that either style can be successful depending upon the situation. This led to a new management approach called *situational leadership*, which forms the basis of the leadership coaching offered by The Blanchard Companies, founded by Ken Blanchard, the author of *The One Minute Manager*. The Blanchard Companies also prescribe to a servant leadership model, which is similar to situational leadership except that it recommends leaders serve subordinates by removing professional barriers to success and placing the needs, aspirations, and interests of others above their own (Sendjaya & Sarros, 2002, p. 57).

The world's number two ranked leadership coach, John Mattone, utilizes the Enneagram as the basis for their leadership framework (Mattone, 2013, pp. 82-100). The use of narrative analysis research allows for a qualitative study to be completed based on feedback regarding the potential effectiveness of a neuroscientific profile-based leadership style that transcends the situational-leadership model, the Enneagram-based model, and similar leadership models in use today.

The goal of the analysis is to determine, based on narrative opinion and feedback, if a neuroscientific profile-based leadership model can be implemented and if the tools proposed for such implementation will be effective and usable.

The strategy to conduct the narrative analysis research consists of a preliminary set of written survey questions, which are used to determine the neuroscience-based personality profile

of the participants, to determine the qualifications and experience level of each leader, and to determine the current leadership framework, if any, in use by the participants.

Guidelines for Participation and Selection of Participants

Using advanced search parameters within LinkedIn Sales Navigator, 37 pre-qualified leaders were selected to participate in a survey. Potential participants were required to meet the following minimum criteria:

1. Current leadership role as evidenced by title of vice president or CxO.
2. Company size of more than 100 employees
3. Team size of more than 10 employees
4. Time of leadership role of more than ten years

The above criteria were used to select nine participants at random from the group of 37, wherein each participant selected a different profile type from the list of nine. Based on the research presented earlier, nine distinct personality profiles were created using the Enneagram and the profiles outlined by Dr. Tina Thomas (Thomas, 2016, pp. 173-178), and each of the nine participants represented one of the distinct nine profiles.

Again using the Enneagram's nine personality profiles, which are typically grouped into three triads that are more emotional, instinctual, or logical (as discussed in a previous chapter), the profiles were grouped into these three categories. Three different colors (green, blue, purple) and nine profile descriptions (helpful, etc.) were used to simplify the profile selection by the participants.

Selection of Narrative Analysis Questions

To ensure satisfactory participation and adequate qualitative data, and to ensure respect for participant convenience and time constraints, the following ten questions were selected for the qualification and preparation survey:

1. When solving leadership challenges at your organization, which of these leadership frameworks do you use most often (select one of three)?

	HELPFUL Improve Relationships Help Teammates
	AMBITIOUS Exceed Goals Achieve Success
	Creative Encourage Creativity Ensure Differentiation

MODERATE COMMUNICATION STYLE

	INNOVATIVE Innovate Intelligently Engineer Logically
	LOYAL Secure Predictability Ensure Loyalty
	ADVENTUROUS Empower Excitement Stimulate Versatility

RAPID COMMUNICATION STYLE



CALM COMMUNICATION STYLE

2. (Based upon the answer to Question 1): When solving leadership challenges at your organization, which (blue, green, or purple) framework do you most often employ (select one of three)?
3. Which of the following best describes your primary role with your organization?
 - a. I influence leadership decisions as part of a team.
 - b. I evaluate leadership decisions as part of a team.
 - c. I make final decisions as the leader of my team.
 - d. I am not involved with leadership decisions.
4. (If answer c is selected above) As a leader, how many people do you manage?
 - a. <10
 - b. >10

If the answer above is b, the following verbal interview questions were asked in a telephone interview:
5. Please describe your most prevalent leadership style (task, relationship, situational, servant, other).

6. What is your familiarity with modern neuroscientific leadership theories or practices?
(this question seeks to determine whether leaders are familiar with research related to leadership neuroscience)
7. Given that you selected (profile framework selected) as your profile, what is your opinion about the accuracy of this type of profile testing? (this question seeks to determine if the participant agrees with the profile type, which validates the efficacy of using a neuroscience-based approach rather than OCEAN, OPQ32, etc.)
8. What is your opinion about the efficacy of utilizing a neuroscience-based personality profiling approach to adjust your situational-leadership style to improve productivity and morale? (this questions seeks to determine the receptiveness of the participant to using a neuroscience-based approach rather than more traditional models such as Situational Leadership II).
9. What is your view about the effectiveness of using a neuroscience-based time management tool as an improved model over Eisenhower's time management matrix?
(this questions seeks to determine the receptiveness of participants to use a neuroscience-based model to better focus the brain on priority tasks). Leaders were sent a spreadsheet example of how this model works (as outlined in Chapter 6) prior to being asked this question.
10. What is your view about the effectiveness of using a neuroscience-based decision-making model as an improved model over other leadership decision-making approaches? (this question seeks to determine the receptiveness of participants to use a decision-making model designed to empower neuroplasticity for effective decision-making). Leaders were sent an example (as outlined in Chapter 6) of how this model

works prior to being asked this question.

Results of Narrative Analysis

Table 1: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant One.



**Lead Perfectly, Enforce Procedures
Ethical, Rules-Based Environment
Integrity & Quality Focus**

Question 1: Leadership Framework	Purple
Question 2: Leadership Framework	Leader
Question 3: Leadership Role	Male Chief Executive Officer, >50 years old, >10,000 employees, New York, Financial Services, MBA
Question 4: Team Size	>10
Question 5: Current Leadership Style	Task-oriented
Question 6: Neuroscientific Familiarity	Limited exposure
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Has used Myers-Briggs and this seems similar, so could be effective if accurate

Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Prefers task-orientation but can see how this might work for more situational-leadership approaches
Question 9: Neuroscientific Time Management Approach Efficacy	Sees the value in creating percentages for each goal
Question 10: Neuroscientific Decision-Making Approach Efficacy	Prefers this to the Eisenhower model as it seems far more accurate and detailed

Table 2: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Two.



Improve Relationships, Help Teammates
Nurturing & Caring Environment
Non-Confrontational Team Focus

Question 1: Leadership Framework	Green
Question 2: Leadership Framework	Helpful
Question 3: Leadership Role	Female Vice President of Human Resources, >40 years old, 5,000 to 10,000 employees, San Mateo, Technology, BSHR
Question 4: Team Size	>10

Question 5: Current Leadership Style	Servant
Question 6: Neuroscientific Familiarity	None
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Can be very effective for team hiring and morale building
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Could provide for a higher culture of trust within the organization
Question 9: Neuroscientific Time Management Approach Efficacy	Sees how this is useful for team planning but not individual use
Question 10: Neuroscientific Decision-Making Approach Efficacy	Not familiar with Eisenhower model but agrees this is useful decision-making approach

Table 3: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Three.



**Exceed Goals, Achieve Success
Confident & Driven Environment
Professional Success Focus**

Question 1: Leadership Framework	Green
Question 2: Leadership Framework	Ambitious
Question 3: Leadership Role	Male Vice President, Sales, >35 years old, 1,000 to 5,000

	employees, Los Angeles, Cybersecurity, MBA
Question 4: Team Size	>10
Question 5: Current Leadership Style	Servant
Question 6: Neuroscientific Familiarity	None
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Can be very effective if validity can be proven
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Could allow for a more effective servant leadership approach
Question 9: Neuroscientific Time Management Approach Efficacy	Very interesting, could be useful to outline team goals & purpose
Question 10: Neuroscientific Decision- Making Approach Efficacy	Prefer the more simplistic Eisenhower model, but open to change where it makes sense

Table 4: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Four.



Encourage Creativity, Ensure Differentiation
Creative & Artistic Environment
Unique & Refined Focus

Question 1: Leadership Framework	Green
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Question 2: Leadership Framework	Creative
Question 3: Leadership Role	Female Vice President of Design, >30 years old, 500 to 1,000 employees, London, Design Agency, BS Liberal Arts
Question 4: Team Size	>10
Question 5: Current Leadership Style	Situational
Question 6: Neuroscientific Familiarity	Heard about neuromarketing for consumer business
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Very creative and outside the box thinking, likes this approach
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Could be interesting for team building and creating a team passion and purpose
Question 9: Neuroscientific Time Management Approach Efficacy	A bit complicated but can see the use for department goal setting
Question 10: Neuroscientific Decision- Making Approach Efficacy	Has used Eisenhower matrix and agrees this is an interesting new approach that could work well

Table 5: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Five.



Innovate Intelligently, Engineer Logically
 Scientific & Technical Environment
 Observational & Rational Focus

Question 1: Leadership Framework	Blue
Question 2: Leadership Framework	Innovative
Question 3: Leadership Role	Male Chief Information Officer, >50 years old, >10,000 employees, Boston, Technology Services, MS Engineering
Question 4: Team Size	>10
Question 5: Current Leadership Style	Relationship
Question 6: Neuroscientific Familiarity	Has neuroscience knowledge but not for leadership
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Based on knowledge of neuroscience, sees how this could be quite useful
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Sees how this could enhance a servant or relationship leadership approach if used correctly
Question 9: Neuroscientific Time	Very detailed and could be

Management Approach Efficacy	useful, but not sure if leaders will be too busy to fill it out
Question 10: Neuroscientific Decision-Making Approach Efficacy	Not familiar with Eisenhower matrix but agrees that this approach is more scientific than others used by leaders

Table 6: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Six.



**Secure Predictability, Ensure Loyalty
Safe & Dependable Environment
Vigilant & Cautious Focus**

Question 1: Leadership Framework	Blue
Question 2: Leadership Framework	Loyal
Question 3: Leadership Role	Male Vice President of Security, >40 years old, >10,000 employees, Chicago, Insurance, MS
Question 4: Team Size	>10
Question 5: Current Leadership Style	Task
Question 6: Neuroscientific Familiarity	Has studied neuroscience but not

	for leadership
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Allows for a safer and more secure model to ensure proper team selection and management
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Could enhance a task-oriented style by more scientifically adjusting the approach
Question 9: Neuroscientific Time Management Approach Efficacy	Likes the detail and cautious approach to ensure the proper time is spent on the right goals
Question 10: Neuroscientific Decision-Making Approach Efficacy	Definitely an enhancement to the Eisenhower matrix

Table 7: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Seven.



**Empower Excitement, Stimulate Versatility
Optimistic & Dynamic Environment
Trendy & Adaptable Focus**

Question 1: Leadership Framework	Blue
Question 2: Leadership Framework	Adventurous
Question 3: Leadership Role	Male Vice President of Business

	Development, >50 years old, >10,000 employees, Orange County, Retail, MS Marketing
Question 4: Team Size	>10
Question 5: Current Leadership Style	Situational
Question 6: Neuroscientific Familiarity	None
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Very exciting new approach that makes sense based on the latest research
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Likes the idea of adjusting the situational model as it is now quite dated and “old school”
Question 9: Neuroscientific Time Management Approach Efficacy	Not enough time to fill this out completely, but might delegate this to others on the team
Question 10: Neuroscientific Decision- Making Approach Efficacy	This approach appears to be far more effective as it allows for all three brains to be employed

Table 8: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Eight.



Ensure Control, Strengthen Teams
 Strong, Assertive Environment
 Decisive, Uncompromising Focus

Question 1: Leadership Framework	Purple
Question 2: Leadership Framework	Commanding
Question 3: Leadership Role	Female Chief Marketing Officer, >40 years old, 100 to 500 employees, Dallas, Energy, MBA
Question 4: Team Size	>10
Question 5: Current Leadership Style	Task
Question 6: Neuroscientific Familiarity	Familiar with neuromarketing but not for leadership models
Question 7: Neuroscientific Profiling Efficacy Viewpoint	Could be quite useful for HR team selection and customer profile as well
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Not sure how this might work for task-orientation but could allow for a softer approach for sensitive individuals
Question 9: Neuroscientific Time	Might prefer a faster and easier

Management Approach Efficacy	model but could delegate the completion of this to others
Question 10: Neuroscientific Decision-Making Approach Efficacy	Prefer this to the Eisenhower model but also suggest making it faster to complete

Table 9: Narrative Survey Questions and Interview Responses to the Qualitative Research Neuroscientific Leadership Model and Tools Proposed for Participant Nine.



Simplify Processes, Avoid Complications
 Trusting, Peaceful Environment
 Uncomplicated & Simplified Focus

Question 1: Leadership Framework	Purple
Question 2: Leadership Framework	Peaceful
Question 3: Leadership Role	Female Chief Financial Officer, >50 years old, >10,000 employees, New York, Banking, MBA
Question 4: Team Size	>10
Question 5: Current Leadership Style	Servant
Question 6: Neuroscientific Familiarity	None
Question 7: Neuroscientific Profiling	Leaders should consider the latest

Efficacy Viewpoint	research and employ new models to stay relevant
Question 8: Neuroscientific Profiling Leadership Style Adjustment Efficacy	Could enhance the servant style by adjusting the approach and messaging to the individual
Question 9: Neuroscientific Time Management Approach Efficacy	Very powerful approach that can improve the focus on passion and purpose to quantify the goals
Question 10: Neuroscientific Decision-Making Approach Efficacy	Far better than the Eisenhower model as it allows for a more accurate way to adjust the time commits to the goal importance

Summary

The research survey indicates the following conclusions:

1. Most leaders are not familiar with nor use neuroscience-based leadership models.
2. Most leaders agree that using a neuroscience-based model could improve leadership results.
3. Most leaders still use traditional task, relationship, or situational leadership styles.
4. Most leaders agree that the use of neuroscience-based leadership profiling appears to be accurate.
5. Most leaders agree that using a neuroscience-based approach to time management can be beneficial as compared to traditional methodologies.
6. Most leaders agree that using a neuroscience-based approach to leadership decision-making can be beneficial as compared to traditional methodologies.
7. More research is needed across a larger sample size with additional neuroscience-based approaches and tools to provide more conclusive accuracy.

10. Conclusion

The findings presented throughout this study establish that the CQI (Career Quotient Indicator™) Assessment system represents a scientifically grounded, validated, and operationally applicable framework for understanding human behavior in modern enterprise environments. Originally developed to measure leadership, engagement, and performance, the CQI framework has been extended and validated as a tool for addressing one of the most pressing challenges facing organizations today: the effective integration of human behavior with rapidly advancing technologies, particularly generative artificial intelligence.

Across all chapters, a consistent conclusion emerges:

Organizational performance, risk, and innovation are increasingly determined not by technology alone, but by the interaction between human behavior and technology systems.

This interaction is shaped by measurable neurochemical, cognitive, and behavioral factors that influence how individuals make decisions, communicate, respond to stress, and engage with tools such as AI.

Synthesis of Key Findings

This study demonstrates that behavioral tendencies are not arbitrary or purely subjective. Rather, they are influenced by identifiable neurochemical systems and cognitive processes that can be measured, analyzed, and applied to real-world organizational challenges.

The CQI system has been shown to:

- Reliably measure behavioral tendencies with high alignment to observed behavior and biological indicators
- Provide predictive insight into how individuals perform under varying conditions, including stress and cognitive load

- Scale across diverse populations and organizational contexts
- Translate behavioral insights into actionable improvements in performance, engagement, and decision-making

When extended to AI-enabled environments, these capabilities become even more significant. The study establishes that:

- AI success is highly dependent on human behavior, particularly in areas such as prompting, validation, and trust calibration
- Behavioral factors such as stress, communication ability, and decision-making patterns directly influence AI outcomes
- Organizations lack effective tools to measure and manage these human variables

The CQI framework addresses this gap by providing a structured, neuroscience-based approach to understanding and improving human interaction with AI systems.

Enterprise Applications of the CQI Framework

Hiring and Talent Selection

In hiring contexts, the CQI system provides a method for evaluating behavioral tendencies that are directly relevant to job performance. Unlike traditional personality assessments, which often rely on static categorizations, CQI offers a dynamic model that considers how individuals behave under varying conditions.

This capability is particularly important in roles that require:

- Decision-making under pressure
- Effective communication and problem-solving
- Adaptability to changing environments
- AI effectiveness, productivity, and security

When used appropriately and in compliance with legal guidelines, CQI can support hiring decisions by identifying candidates whose behavioral profiles align with the demands of the role. It also enables organizations to move beyond surface-level qualifications and assess deeper drivers of performance.

Employee Development and Learning

The CQI framework is highly effective in guiding employee development and learning initiatives. By identifying individual differences in cognitive processing, communication style, and stress response, organizations can tailor training programs to maximize effectiveness.

This includes:

- Aligning training delivery methods with learning styles and courses
- Addressing specific behavioral and soft skill gaps
- Improving engagement and retention of information
- Ensuring effective and safe AI usage

In AI contexts, this personalization becomes critical. Employees require not only technical knowledge but also the ability to communicate effectively with AI systems, evaluate outputs, and adapt to new workflows. CQI enables organizations to design training programs that address these needs at both individual and organizational levels.

AI Usage and Workforce Readiness

One of the most significant contributions of this study is the application of CQI to AI workforce readiness. The research demonstrates that behavioral factors such as trust, stress, and communication directly influence how individuals interact with AI systems.

For example:

- High trust may lead to overreliance on AI outputs

- High stress may result in reduced validation and increased error rates
- Strong communication and other soft skills are associated with higher-quality prompts

By measuring these factors, CQI enables organizations to:

- Identify employees who are well-suited for advanced and secure AI usage
- Detect potential risk factors before they result in errors or incidents
- Implement targeted interventions to improve AI performance
- Instill trust and proper prompting techniques when using AI

This capability is particularly important in light of recent research highlighting the risks associated with AI overconfidence, cognitive shortcuts, and decentralized adoption practices.

Sales and Marketing Effectiveness

In sales and marketing functions, where communication and persuasion are central, the CQI framework provides valuable insight into how individuals craft messages, engage with customers, and leverage AI tools.

Generative AI is increasingly used to produce content, develop messaging, and support customer interactions. However, the effectiveness of these tools depends on the user's ability to:

- Structure prompts effectively
- Apply storytelling principles
- Evaluate and refine outputs
- Use CQI and AI for ICP validation, prospect profiling, and messaging personalization

CQI identifies strengths and gaps in these areas, enabling organizations to improve:

- Messaging quality
- Customer engagement
- Conversion outcomes

Additionally, by aligning behavioral profiles with roles and responsibilities, organizations can optimize team composition and performance.

Productivity and Operational Performance

Productivity has traditionally been measured in terms of output volume or efficiency. However, this study highlights that productivity is also influenced by behavioral factors, particularly in AI-enabled environments.

The introduction of AI often creates what may be described as a “productivity illusion,” where output increases but quality and accuracy may decline due to overreliance on automated systems.

CQI addresses this challenge by:

- Identifying behavioral patterns that contribute to inefficiencies
- Reducing stress-related performance degradation
- Improving decision-making quality

The outcome-based validation presented in this study demonstrates that organizations using CQI have achieved significant improvements in performance, engagement, and customer outcomes. These improvements are directly linked to the ability to measure and manage human behavior more effectively.

Legal and Ethical Implications

The study also establishes that the CQI system can be implemented in a manner that is consistent with modern legal and regulatory expectations. By focusing on behavioral and job-relevant attributes, and by providing transparent and explainable outputs, CQI avoids many of the risks associated with opaque AI systems.

When used appropriately, CQI supports:

- Compliance with EEOC guidelines
- Alignment with emerging AI governance frameworks
- Reduction of legal risk associated with automated decision-making

This positions the framework as a viable and defensible tool for enterprise adoption.

Strategic Implications for Organizations

The findings of this study suggest that organizations must adopt a broader perspective on AI readiness and workforce performance. Traditional approaches that focus solely on technology and processes are insufficient.

Instead, organizations must consider:

- The behavioral readiness of their workforce
- The interaction between human tendencies and AI systems
- The role of neuroscience in shaping decision-making and performance

The CQI framework provides a means to operationalize this perspective, enabling organizations to move from reactive management to proactive optimization.

Final Conclusion

This study demonstrates that the integration of neuroscience, behavioral science, and organizational research provides a powerful foundation for understanding and improving human performance in modern enterprise environments.

The CQI system extends this foundation into the domain of AI, addressing a critical gap in current approaches to AI adoption and governance.

The success of AI is not determined solely by algorithms, data, or infrastructure. It is determined by the humans who design, use, and interpret these systems.

By providing a validated, scientifically grounded method for measuring and improving human behavior, the CQI framework enables organizations to:

- Enhance productivity
- Reduce risk
- Improve decision-making
- Fully realize the potential of AI

Closing Statement

As organizations continue to invest in AI and digital transformation, the importance of understanding human behavior will only increase.

The CQI system offers a practical and defensible approach to addressing this challenge, establishing a new paradigm:

Human Risk Intelligence as a foundational component of enterprise performance in the age of AI.

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Field trials and study results

CQI fields tests and MediKeeper Health Assessment portal data assessment results for 3,000+ individuals are available upon request. The Leadwell86 ending identifier (e.g; 1e, 1i, 2e, etc.) refers to the determined personality profile type (e.g; Type 1 Extroverted, Type 2 Introverted, etc.).

Unique ID	Group Id	DOB	Registration Date	Zip Code
MK083838	leadwell86	1/1/1970	5/9/2019	92109
MK086607	Leadwell861e	1/1/1970	6/12/2019	92026
MK100853	Leadwell861i	10/28/1947	11/14/2019	EH209ER
MK113129	Leadwell861i	8/9/1958	3/29/2020	32931
MK126641	Leadwell861i	9/12/1980	10/16/2020	91950
MK089270	Leadwell862e	6/6/1960	7/15/2019	92108
MK101844	Leadwell862e	6/25/1969	11/27/2019	GU113JZ
MK104464	Leadwell862e	1/2/1956	1/6/2020	66215
MK106012	Leadwell862e	11/14/1984	1/17/2020	92663
MK109962	Leadwell862e	6/2/1942	2/17/2020	90292
MK116853	Leadwell862e	10/24/1951	6/11/2020	7878259
MK126386	Leadwell862e	9/22/1961	10/14/2020	91910
MK115244	Leadwell862i	4/7/1973	5/6/2020	64801
MK125425	Leadwell862i	11/28/1971	10/3/2020	398157
MK086693	Leadwell863e	5/19/1951	6/14/2019	92028
MK087385	Leadwell863e	8/26/1969	6/21/2019	6082
MK090544	Leadwell863e	9/14/1952	7/31/2019	89128
MK090608	Leadwell863e	2/21/1979	8/1/2019	23836

MK097342	Leadwell863e	8/26/1948	10/10/2019	95683
MK097980	Leadwell863e	8/26/1938	10/16/2019	95683
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MK100966	Leadwell863e	1/16/1986	11/16/2019	80111
MK106037	Leadwell863e	11/21/1972	1/17/2020	91214
MK107609	Leadwell863e	2/21/1979	1/28/2020	23836
MK108037	Leadwell863e	1/5/1959	1/30/2020	90292
MK112378	Leadwell863e	12/23/1978	3/13/2020	41011
MK112719	Leadwell863e	5/31/1967	3/19/2020	27613
MK113124	Leadwell863e	10/12/1979	3/29/2020	92071
MK114689	Leadwell863e	6/28/1967	4/25/2020	91910
MK117837	Leadwell863e	4/17/1977	6/25/2020	93001
MK120366	Leadwell863e	4/7/1963	8/3/2020	91105
MK120379	Leadwell863e	1/12/1977	8/3/2020	8094
MK120438	Leadwell863e	8/27/1974	8/4/2020	29229
MK123349	Leadwell863e	5/29/1960	9/12/2020	93021
MK126300	Leadwell863e	6/28/1967	10/13/2020	91910
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MK086981	Leadwell863i	1/5/1959	6/18/2019	83864
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MK104490	Leadwell863i	12/3/1981	1/6/2020	32505
MK113843	Leadwell863i	3/30/1960	4/10/2020	95124
MK116235	Leadwell863i	6/11/1967	5/31/2020	90278
MK120437	Leadwell863i	8/29/1967	8/4/2020	49441
MK087394	Leadwell864e	9/26/1988	6/21/2019	66046
MK106764	Leadwell864e	7/8/1994	1/22/2020	36043
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MK117572	Leadwell865e	11/3/1957	6/22/2020	91767
MK120278	Leadwell865e	10/6/1971	7/31/2020	76092
MK122251	Leadwell865e	12/9/1974	9/1/2020	98008
MK092675	Leadwell865i	1/1/1990	8/25/2019	95218
MK106121	Leadwell865i	9/25/1987	1/19/2020	90802
MK110037	Leadwell865i	9/11/1995	2/18/2020	19446
MK110573	Leadwell865i	4/11/1988	2/23/2020	85755
MK111821	Leadwell865i	2/1/1977	3/7/2020	8053

MK115454	Leadwell865i	6/27/1957	5/11/2020	85045
MK120377	Leadwell865i	9/18/1965	8/3/2020	92131
MK123359	Leadwell865i	2/9/1982	9/12/2020	73020
MK129511	Leadwell865i	5/25/1959	11/20/2020	62684
MK087139	Leadwell866i	8/26/1948	6/20/2019	95683
MK087501	Leadwell866i	6/30/1956	6/21/2019	92081
MK090878	Leadwell866i	10/7/1989	8/5/2019	64701
MK101573	Leadwell866i	7/16/1948	11/22/2019	94022
MK105103	Leadwell866i	12/2/1977	1/11/2020	123456
MK117919	Leadwell866i	6/17/1959	6/28/2020	69404
MK090379	Leadwell867e	5/19/1976	7/29/2019	85254
MK099836	Leadwell867e	11/5/1990	11/5/2019	95113
MK113210	Leadwell867e	1/7/1953	3/31/2020	92677
MK109701	Leadwell868e	03/30/1056	2/13/2020	92109
MK103780	Leadwell869i	4/14/1978	12/29/2019	90026

Professional Survey Results across 136 individuals to determine profile type, validated by subsequent vocal calls.

Respondent	StartDate		Title	Profile Type
4707884875	05/05/2016	InterWest Insurance	95864 Systems Engineer	I am observant, intelligent, inventive, and like to understand how things work
4707883447	05/05/2016		92630 IT Manager	I am observant, intelligent, inventive, and like to understand how things work
4707741738	05/05/2016	PSAV	60176 Support Technician	I am observant, intelligent, inventive, and like to understand how things work
4707594257	05/05/2016	Chapel Hill-Carrboro City Sc	27516 Director of IT Operations	I am observant, intelligent, inventive, and like to understand how things work
4707524990	05/05/2016	LACCD	90017 Data Communications Specialist	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4707377684	05/05/2016	NetApp	1245 IT Manager	I am right most of the time, very ethical, hardworking, and follow the rules
4707259420	05/05/2016	Capricorn	97435 Owner	I am confident, driven, goal-oriented, and strive to be successful
4707214387	05/05/2016	Dynamic Aviation	22812 IT Manager	I want to help others and nurture friendships and relationships
4707195198	05/05/2016	Dolby Laboratories, Inc.	94103 Senior Manager, IT Architecture	I am observant, intelligent, inventive, and like to understand how things work
4706919215	05/05/2016	Draper, Inc	47385 Director of Information Technology	I am confident, driven, goal-oriented, and strive to be successful
4706891742	05/05/2016	Cimpress (Vistaprint)	NBP 1V9 Senior IT Manager	I am observant, intelligent, inventive, and like to understand how things work
4706001000	05/05/2016	L-3 Communications	92123 PC Support\Communications Techn	I am confident, driven, goal-oriented, and strive to be successful
4705917111	05/05/2016	SUNY	10001 VP	I am fun, exciting, optimistic, and enjoy exploring new things
4705678325	05/04/2016	OnCore Manufacturing	92078 IT Architect	I am confident, driven, goal-oriented, and strive to be successful
4705676438	05/04/2016	Serco	3000 Director IT	I am observant, intelligent, inventive, and like to understand how things work
4705603359	05/04/2016	University of Chicago Medic	60561 Manager, Backup & Storage	I am confident, driven, goal-oriented, and strive to be successful
4705592086	05/04/2016	Nationwide	43215 Manager, IT Applications	I am observant, intelligent, inventive, and like to understand how things work
4705550206	05/04/2016	Hill College	76645 Vice President of Informationology	I am confident, driven, goal-oriented, and strive to be successful
4705526219	05/04/2016	Paragould School District	72450 Technology Director	I am observant, intelligent, inventive, and like to understand how things work
4705496971	05/04/2016	Rider University	8648 Associate Director	I am a strong, assertive, in control, and decisive
4705431646	05/04/2016	Monical Pizza Corporation	60915 IS Specialist	I am observant, intelligent, inventive, and like to understand how things work
4705364685	05/04/2016	NCSECU	27603 Sr. Systems Engineer	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4705353193	05/04/2016	Ford Motor Company	60633 Senior IT Manager	I am right most of the time, very ethical, hardworking, and follow the rules
4705249623	05/04/2016	Eversource Energy	6037 Enterprise Architect	I am observant, intelligent, inventive, and like to understand how things work
4705213233	05/04/2016	Equifax	30005 Sr Director Technology	I am confident, driven, goal-oriented, and strive to be successful
4705164717	05/04/2016	Athens Technical College	30601 Vice President for IT	I am right most of the time, very ethical, hardworking, and follow the rules
4705161630	05/04/2016	OneBlood, Inc	32819 IT Manager	I am confident, driven, goal-oriented, and strive to be successful
4705082419	05/04/2016	MT	11201 IT Analyst and Research	I am right most of the time, very ethical, hardworking, and follow the rules
4705077641	05/04/2016	First Midwest Bank	60431 Senior Project Manager	I am confident, driven, goal-oriented, and strive to be successful
4705048322	05/04/2016	AXA	7030 Head of Digital Differentiation	I am observant, intelligent, inventive, and like to understand how things work
4705045946	05/04/2016	HPE	98683 SVC Info Developer	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4705044379	05/04/2016	Steiner Electric Co.	60007 EDI/eCommerce Support	I am confident, driven, goal-oriented, and strive to be successful
4705040465	05/04/2016	Tha Manhattan Club	10019 IT Director	I am a strong, assertive, in control, and decisive
4705036329	05/04/2016	Freddie Mac	22315 Director, Application Services	I am observant, intelligent, inventive, and like to understand how things work
4705030499	05/04/2016	Tulane University	70112 Assistant Vice President for Enter	I am right most of the time, very ethical, hardworking, and follow the rules
4705028818	05/04/2016	Monmouth University	7764 Dir of Service Response for Specia	I am right most of the time, very ethical, hardworking, and follow the rules
4705019455	05/04/2016	MetLife	27517 Project Manager	I am right most of the time, very ethical, hardworking, and follow the rules
4704986084	05/04/2016	Allstate	60062 Risk Management & Compliance	I am confident, driven, goal-oriented, and strive to be successful
4704979670	05/04/2016	Everence	46526 Network Administrator	I want to help others and nurture friendships and relationships
4704967662	05/04/2016	University of Houston	77204 Dir. Architecture and Tech Svcs - E	I am observant, intelligent, inventive, and like to understand how things work
4704966356	05/04/2016	BNP Media	48084 IT Director	I am observant, intelligent, inventive, and like to understand how things work
4704960683	05/04/2016	Gibson, Dunn & Crutcher LLP	90071 eDiscovery SysAdmin/Sr. Program	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4704946131	05/04/2016	fitzpatrick hotel group	10022 director of IT	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4704945458	05/04/2016	Mediabrand	60515 Senior Network Analyst	I am observant, intelligent, inventive, and like to understand how things work
4704933278	05/04/2016	Faribault Public Schools	55021 Network Manager	I am confident, driven, goal-oriented, and strive to be successful
4704930794	05/04/2016	S&P	10041 VP - Global Head Technology Ope	I am confident, driven, goal-oriented, and strive to be successful
4704917725	05/04/2016	TMI Hospitality	58104 Project Manager	I am fun, exciting, optimistic, and enjoy exploring new things
4704911229	05/04/2016	Deutsche Bank	7302 AVP IT	I am fun, exciting, optimistic, and enjoy exploring new things
4704909668	05/04/2016	Equifax	30374 Director, Global Sourcing	I am loyal, cautious, and prefer safe, proven courses of action
4704908736	05/04/2016	ADG, LLC	48348 CIO	I am confident, driven, goal-oriented, and strive to be successful
4704887203	05/04/2016	Design Drafting Services	92117 Mechanical Design Engineer	I am right most of the time, very ethical, hardworking, and follow the rules
4704886750	05/04/2016	AIG	7922 Global F&A IT Risk, Security & Cor	I want to help others and nurture friendships and relationships
4704872305	05/04/2016	UCG	20878 Dir of Software Development	I am confident, driven, goal-oriented, and strive to be successful
4704871036	05/04/2016	Wayne Automatic Fire Sprin	34761 Director of Information Technology	I am confident, driven, goal-oriented, and strive to be successful
4704864125	05/04/2016	SUNY	10001 SR. IT MANAGER	I am confident, driven, goal-oriented, and strive to be successful
4704860108	05/04/2016	A-dec, Inc.	97132 System Administrator	I am observant, intelligent, inventive, and like to understand how things work
4704854636	05/04/2016	Faith Baptist Schools	91304 Network Administrator	I am observant, intelligent, inventive, and like to understand how things work
4704847156	05/04/2016	RBC	Project Manager	I am confident, driven, goal-oriented, and strive to be successful
4704835288	05/04/2016	YKHC	99559 IT Security Officer	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4704822028	05/04/2016	Legacy Marketing Partners	60654 Director, IT	I am observant, intelligent, inventive, and like to understand how things work
4704813987	05/04/2016	BNYM	8840 Managing Director	I am confident, driven, goal-oriented, and strive to be successful
4704813564	05/04/2016	Belton School District	64082 Director of Technology	I am confident, driven, goal-oriented, and strive to be successful
4704793886	05/04/2016	City of Odessa	79761 Software Systems Analyst	I am observant, intelligent, inventive, and like to understand how things work
4704790558	05/04/2016	AVL	48170 Director of IT	I am confident, driven, goal-oriented, and strive to be successful
4704787462	05/04/2016	Dollar Bank	15222 AVP Enterprise Production Suppo	I am confident, driven, goal-oriented, and strive to be successful
4704785397	05/04/2016	CIOX Health	30005 Sr. Director, IT Infrastructure & Solutions	
4704784135	05/04/2016	Everest	7938 VP, IT	I am observant, intelligent, inventive, and like to understand how things work
4704782675	05/04/2016	Prometheus Laboratories	92121 IS Support Supervisor	I am confident, driven, goal-oriented, and strive to be successful
4704779993	05/04/2016	Bgea	28217 Director, IT	I am observant, intelligent, inventive, and like to understand how things work
4704764553	05/04/2016	Mckinstry	98373 Architect	I am observant, intelligent, inventive, and like to understand how things work
4704763305	05/04/2016	M&T B&A	14203 Admin Vice President	I am observant, intelligent, inventive, and like to understand how things work
4704757231	05/04/2016	WFUBMC	27157 Applications Analyst II	I am observant, intelligent, inventive, and like to understand how things work
4704751420	05/04/2016	Martin, Pringle, Oliver, Wall	67202 IT	I am observant, intelligent, inventive, and like to understand how things work
4704746809	05/04/2016	TMP Worldwide	10004 Vice President of IT	I want to help others and nurture friendships and relationships
4704739877	05/04/2016	Wastequip	28211 IT Director - Infrastructure	I am observant, intelligent, inventive, and like to understand how things work
4704737977	05/04/2016	PMA	48104 SR. IT Consultant	I am loyal, cautious, and prefer safe, proven courses of action
4704732721	05/04/2016	Newalta Corporation	T3K5H8 BI/BW/BO Technical Analyst	I am confident, driven, goal-oriented, and strive to be successful
4704731461	05/04/2016	Kolcraft Enterprises, Inc	60607 Director, Information Technology	I am right most of the time, very ethical, hardworking, and follow the rules
4704723473	05/04/2016	Belhaven University	39202 IT Director	I am observant, intelligent, inventive, and like to understand how things work
4704719841	05/04/2016	Sacred Heart University	6825 Manager of Information Systems	I am observant, intelligent, inventive, and like to understand how things work
4704717058	05/04/2016	Pioneer Balloon Company	67220 System Analyst	I am observant, intelligent, inventive, and like to understand how things work
4704716752	05/04/2016	Lux	45040 VP of IT	I am observant, intelligent, inventive, and like to understand how things work
4704715826	05/04/2016	Allstate Insurance Co.	28078 Manager - Operations Technology	I am fun, exciting, optimistic, and enjoy exploring new things
4704714057	05/04/2016	FPG Child Development Inst	27510 Director of IT	I am easy-going, at peace, and prefer to avoid confrontations or arguments
4704713612	05/04/2016	Broadcast Music, Inc.	37203 Sr Director, Client Ops	I am loyal, cautious, and prefer safe, proven courses of action
4704713335	05/04/2016	Southern Virginia University	24416 Executive Director of Campus Opi	I am observant, intelligent, inventive, and like to understand how things work
4704712492	05/04/2016	Dex Media	1949 Manager - Windows Server, Mess	I am observant, intelligent, inventive, and like to understand how things work
4704708352	05/04/2016	AIG	7302 Information Officer	I am right most of the time, very ethical, hardworking, and follow the rules
4704705217	05/04/2016	Jockey International Inc.	53140 IT Business Systems Manager	I am right most of the time, very ethical, hardworking, and follow the rules
4704698288	05/04/2016	Pikes Peak Hospice	80906 Systems Administrator	I am observant, intelligent, inventive, and like to understand how things work
4704694170	05/04/2016	Dassault Systems	80021 Systems and Storage Engineer	I am unique and creative and others may think I march to a different beat
4704692209	05/04/2016	Amerisure	48331 CTO	I am confident, driven, goal-oriented, and strive to be successful
4704689239	05/04/2016	Shallowater ISD	79363 Technology Director	I am observant, intelligent, inventive, and like to understand how things work
4704688874	05/04/2016	Opus Holding, L.L.C.	55343 CIO	I am a strong, assertive, in control, and decisive
4704688380	05/04/2016	Jo	IT Manager	I am observant, intelligent, inventive, and like to understand how things work
4704684909	05/04/2016	Karcher	92121 Senior IT Engineer, Staff	I am confident, driven, goal-oriented, and strive to be successful
4704683931	05/04/2016	Geosyntec Consultants	30319 Voice/Network Engineer	I am observant, intelligent, inventive, and like to understand how things work
4704683583	05/04/2016	LVC	17003 Manager of Infrastructure	I am a strong, assertive, in control, and decisive
4704682218	05/04/2016	Best Best & Krieger LLP	92501 Director of Information Services	I am observant, intelligent, inventive, and like to understand how things work