

Through the Mind, We Create Change

Coaching Methodologies for Enabling Change

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Abstract

Change is the foundational outcome of coaching. As adults, the majority of what we do, think, observe, and perceive on a daily basis is handled subconsciously. To bring about change, we must consciously engage with and develop new habits of thought and action.

This paper explores the implications of the current studies of the mind and of brain functioning on methods for coaching and self-directed growth, including coaching process, structures and questions. Coaching methods are enhanced through understanding the physical effects on the brain of conscious attention and the factors that enhance the brain's ability to "reprogram". Whether through coaching or self-directed growth, our minds have the ability to change our brains and our lives.

Introduction

The power of willful activity to shape the brain remains the working principle not only of early brain development, but also of brain function as an ongoing, living process.

Jeffrey M. Schwartz and Sharon Begley (2002). *The Mind and the Brain*

An understanding of the brain structure and knowledge of recent advances in understanding brain functions can inform the methods used by coaching. The first section of this paper outlines the basic structure of the brain and the key elements of brain function which impact the ability to learn, change and grow.

Building on these fundamentals, the second section discusses and recommends coaching tools, processes and structures that tie into and enhance the willful activity of shaping the brain.

Key Elements of the Brain Involved in Change

You can't teach an old dog new tricks.

This common idiom is interpreted as “people who have long been used to doing things in a particular way will not abandon their habits” (*The New Dictionary of Cultural Literacy*, 2003). Habits represent those behaviors that require minimal or sporadic thought to initiate and terminate actions within relatively stable environments. These habits are nothing more than strong, stable and highly connected chains of neurons in our brain – the wiring, so to speak. Research has shown that while the vast majority of what we sense, think and do on a daily basis is governed by existing neuronal networks, they are not “hard-wired” in adults. Indeed, the brain has a tremendous capability to adjust and adapt as needed – a concept referred to as neuroplasticity.

Structure of the Brain

Human brains are highly complex structure comprised of three main sections:

1. Brain stem – controlling the vital processes of living such as breathing and heart rate.
2. Cerebellum – controlling physical activities such as standing, movement and coordinating senses; including many of our automatic behaviors.
3. Cerebral cortex – controlling the higher brain functions.

Engaging and utilizing the cerebral cortex is integral to bringing about change. Areas of the cerebral cortex key in coaching and learning are, briefly:

1. Sensory cortex – responsible for managing sensory input
2. Back integrative cortex – responsible for creating images and meaning
3. Frontal integrative cortex – responsible for directing brain activity, making decisions, and short-term memory
4. Motor cortex - responsible for coordinating voluntary movement including speech
5. Amygdala – the brain's primary emotional center.

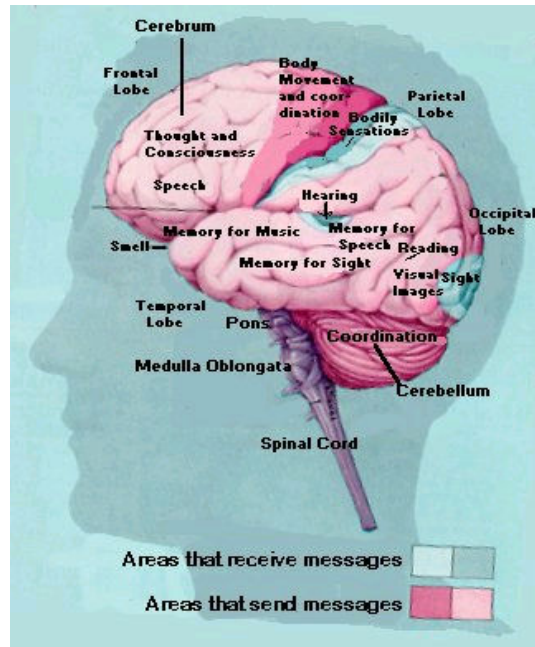


Figure 1: Parts of the Human Brain from Wesson, Kenneth A. "Brain Basics' for the Teaching Professional: Part 1"

Below this high-level look at the brain are 100 billion neurons. The neurons are the nerve cells that transmit the signals for such things as seeing the color blue, moving the legs to run, or experiencing excitement. Each neuron has up to 10,000 connections to other neurons, enabling it to connect the color blue to excitement, or to the finish line for the race. In fact, every thought we have, every action we take is based on a network of neurons. In strengthening, diminishing and creating new neuronal networks, we bring about changes in habit.

Fundamentals of Neuroplasticity

Neuroplasticity is defined as the "ability to change [the brain's] structure and function in response to experience" (Begley, 2007). Genetics and evolution define the initial stages in the development of all neuron networks. Once formed however, experience becomes the cornerstone of further development. Whether the experiences are sensory, motor or intellectual, information is processed in the cortex of the brain, and the brain attempts to match up the components of the information with related elements on an existing network. Learning something new is done only by connecting it to an existing neuronal network.

While the brain is extremely adept at adaptation, it "hard-wires" whatever it can. Actions, thoughts and behaviors controlled through existing networks – habituated actions – require limited mental energy leaving resources available to deal with new information and situations.

Consequently, whether correct or not, the connections between actions, thoughts and behaviors become stronger, and potentially habituated, through repetition and emotional importance. The more frequently a neuronal network is employed or connected to, the stronger it will become. Additionally, experiences linked with strong emotional importance (positive or negative) stimulate chemical changes in the brain, namely the release of acetylcholine. These chemicals increase the responsiveness of existing neuronal networks and allow stronger and more numerous connections to be made.

Conscious Attention

Brains are limited in what they can handle in a conscious state. As a consequence, adults go through life seeing, hearing and experiencing countless things to which limited or no attention is paid. There are significant events, for example an explosion, that impinge regardless of attention. Less significant events register and are stored in short-term memory only with conscious attention. Attention appears to work by biasing the brain toward the stimuli and by reducing inputs from competing regions. Further, studies indicate that attention must be complemented by a mental state predisposed to accepting or rejecting the information. Conscious attention serves to open the brain to inputs allowing new or stronger neuronal networks to form. Over time, the neuronal networks associated with the area of attention will result in a physical, stable change in the brain.

Working Memory

When engaged in a conversation, most of the work is done by the working memory, in the frontal-integrative cortex. Experience suggests that working memories are limited to engaging in about seven ideas at a time. The trade-off for the size limitation is that this area of the brain is fast, agile, and able to process the multiple streams of information simultaneously. This part of the brain is especially suited for handling relatively simple, near-term goals. With the working memory functioning around a limited number of verbal ideas and concepts, it is not well suited to developing new neuronal networks.

Emotional Response

When stimuli are inconsistent with expectations, the brain rapidly signals a problem. Brain activity increases in the sensory cortex, seeking additional inputs. The amygdala (also known as the fear center) generates chemical signals moving energy away from the frontal cortex. Consequently, the ability to make judgments, take decisions, process information in short-term memory becomes severely restricted.

Similarly, when actions are inconsistent with an existing habit, the brain signals an error. Emotions, including fear and discomfort, are triggered in combination with a reduced capability for rational thought. Only through counteracting this natural resistance to change can new habits be formed.

Engaging the Brain in Change: Implications for Coaching

Cells that fire together wire together.

Carla Schatz 1992

Knowledge of how the brain processes information, how new patterns of thinking and acting are acquired, the natural response to change, and mechanisms that support the development of new patterns, provides a stronger foundation for existing coaching tools and processes. It further suggests structures for the coach and the client which facilitate positive change.

Challenging the Client

When operating within a stable environment, existing neuronal networks govern the majority of actions and thoughts. Performance becomes automatic and subject to only limited

improvement. To bring about substantial change, the client needs to conclude that they want to change, and then be challenged to go beyond competence to real growth. In this process, the coach must recognize that the client's brain, regardless of their words, is naturally structured to resist change.

Emotional importance and motivation are key to challenging the client. Words, somatic markers, prior memories, and physical sensations move the client's thinking out of working memory into the back integrative cortex where new neuronal networks can be established. Reflecting on similar past successes and the feelings associated with them may enhance motivation and create strong positive emotions strengthened neuronal development. Nudging clients to set or take on goals beyond the immediately obvious ones increases accountability, and therefore, emotional importance.

Cycle of Change

With emotional importance attached, the client moves forward into the change with initial energy and excitement. As the client moves from unconscious incompetence to conscious incompetence, there is a high risk of frustration and a rapid return to status quo. The amygdala is set to reinforce current knowledge and behaviors, and to trigger concerns about new information and challenges. Acknowledgement by the coach and the client of some progress and success, no matter how small, serves to feed the emotions and maintain motivation. Success breeds motivation, which combined with directed action, leads to greater success.

It is inevitable that the client's pace of growth and learning will slow. He may become frustrated with implementing his ideas, lose touch with the emotional importance, or find the change no longer new and challenging. It is critical that the coach work with the client to identify the reason for the slowing of change and re-engage the client. It may be necessary to increase the level of the challenge, reconnect with the emotional importance or find new support structures for the change.

Focused Attention

The development of neuronal networks indicates that attention focused on an idea (or habit) closely enough, often enough and long enough builds the strength of the habit or idea. The attention can take a number of forms. Reinforcement and positive feedback are typical tools of the coach in maintaining attention on an idea. They are a signal to the client's brain to do more. Positive feedback serves to mark new synapses for preservation rather than pruning. Through the release of dopamines, positive feedback further serves to calm the mind and enhance focus.

The questions of the coach are also a key tool in focused attention. Questions help the client create new connections, building and increasing the importance of the related neuronal networks. More on questions will be covered below in Powerful Questioning.

Focused attention can have a downside as well. Self-criticism and self-doubt may be equally based in existing neuronal networks. The greater the attention given these networks through "mind chatter", questioning, or discussion, the stronger they become. Self-criticism uses neuronal activity, thereby limiting energy and capacity to work on new behaviors. Clients may benefit from learning skills, such as meditation and affirmation, to quiet the self-criticism. Research shows that brains do not change wrong information; we have the option of treating it as incomplete and building onto it, or pruning it through lack of attention. Any coaching discussions needed about the self-criticism or self-doubt should focus on "adding to" rather than arguing with the concepts. Coaches should refrain from following a client

down the path of wondering why she thinks the way she does. In this search for “why”, the client potentially builds new connections and reinforces the thinking. As long as attention is given to the self-criticism, it should be in the form of searching for the roots of new habits.

Clearing Emotion

Clients stuck in a negative emotional state will not be able to move forward to creating insights. The amygdala is sending out signals that something is wrong. The body is tensed to “fight or flee”, and the energy needed to think, process and integrate new information is tied up with the motor cortex. The longer the client remains in this state, the more difficult it becomes to re-engage in thinking.

It is for this reason that the coach should steer the client rapidly away from the current story. The coach should seek to clear the emotions by having the client return to a past, current or future place where there is success. The coach could ask the client to close her eyes, return to the place of success and remember the feeling associated with the success; and then project that forward. Alternatively, the client can put herself into the successful position in the future, and talk about what she would have done, been or accomplished to get there.

These techniques move the person from the “now”, with its fears and doubts, to a safer place. The brain calms, adrenaline drops, and she is closer to being able to achieve an insight into her next step.

Creating Insights

When a client is struggling with a dilemma, for example, he wants to make a change, but does not know how to proceed, the coach can offer suggestions or help the client search for an insight. If the coach does the thinking for the client, the client does not have the opportunity to create any new neuronal connections. Further, suggestions may engage the amygdala, potentially reinforcing resistance to the change. By withholding suggestions, offering them only when they clearly connect to the client’s thoughts and reflections, the coach supports the client in creating new understandings.

Brain research indicates that learning occurs only through building upon existing networks. The coach can not know what networks the client has, nor the structure – that is what connects with what. Exploration into relevant past experiences using different sensory avenues enables the discovery of relevant links and the creation of new ones. These avenues can include movement, story-telling, imagery, metaphors, similes, dance, music, poetry, role plays, and dialogue. These tools serve a number of purposes. They engage many parts of the brain, including emotions and sensory memories, enhancing the likelihood of new connections. When combined with closed eyes, the brain increases its focus on internal stimuli. At this stage, the brain is not thinking analytically and logically – the energy has moved out of the frontal cortex or working memory into the integrative cortex, where the links can occur.

Adrenaline and neurotransmitters are released in the “aha” moment when insight occurs and new neuronal links are formed. Capturing the physical, emotional and energy rush associated with the rush of the insight is a critical coaching skill. Capturing the idea, and fleshing it out immediately takes advantage of both the mental momentum and the energy associated with it. Focused attention by the coach and the client gives the insight added opportunities to build lasting connections in the client’s brain.

Powerful Questioning

A key insight from brain research is that learning takes place only by building onto existing neuronal networks. Further, it has been shown that in focusing on the wrong information, the neuronal network will actually be strengthened. With this information, it becomes important that the questions of the coach be carefully structured to focus on new understandings, insights and habits that will lead to the desired outcome or change.

In exploring self-doubt or past challenges, the client or coach could pursue a path of “why do you think you have that belief?” In such questions, attention has been increased on the self-doubt, potentially enhancing it. The client’s brain focuses on re-energizing diminished neuronal networks or creating new ones. In fact, neuronal links may be created which never previously existed, as the client seeks an explanation. These actions increase the strength of the self-doubt, rather than diminish it. Rather, as the coach and client look to the past, the focus needs to be on the positive, for example, “How have you overcome something like this in the past?”, or “What evidence do you have to show that this is not always true?”

Nonspecific questions, such as “What do you notice as you think about...?”, force the client thinking out of the frontal cortex or working memory into other cortical regions, enhancing the possibility of new insights and connections. Broad questions like “Imagine you did know, what would that be like?” require the client to stop and think deeply, looking for hidden or new connections. Powerful questions such as “What are you not telling me?” require the client to evaluate a wider range of truth and can not be answered solely from the working memory. In all cases, the questions aim to stimulate knowledge and connections held more deeply in the brain than the working memory.

Asking the client to attach numbers to statements, for example, “How important is this to you on a scale of 1 to 10?” or “How committed are you to this plan on a scale of 1 to 100?” require the client to stop and reflect, and consequently increase focus. Working memory then holds this finite information easily and then can work with it quickly to see connections or disconnects. The client is forced to give a precise answer and be honest with herself.

Using a range of verbs (what do you see, hear, feel, sense) in the questioning stimulates larger areas of the brain. This enables the client and coach to find the relevant links toward the creation of new insights.

Structures

At every stage of the coaching process, the coach should be seeking to build additional neuronal connections and strengthen new ones in support of the desired change. After the client has experienced an insight, celebrated the notion and fleshed it out, further strengthening of the new network can be achieved through physical action. Frequently clients will note the insight for themselves at the time of the session. Further requesting the client to write an email after the session, talk about it to others, and taking a physical step within the subsequent few hours, all serve to increase focus, increase brain activity, stimulate the neuronal connections, and maintain momentum. A weekly update form prior to the subsequent session provides further reinforcement, reflection and focus to the change activity.

Emotional importance can be increased and supported through various structures. The first step is creating clear linkage between the immediate action and the concrete benefits of the overall change. The client enhances emotional importance through detailed and specific definitions of the benefits and outcomes of the change. Turning those benefits into words, pictures, dream maps, stories or other complete visualizations more fully integrates the goal into the client’s thoughts and actions.

As noted above, seeking a numerical level of commitment to an action or goal, places the commitment into working memory. Details such as “by when” and established accountability through a check-back process increase neuronal connections and emotional importance. The client should also be challenged to set structures for herself that supports her goal. Structures can range from tally sheets, daily affirmations, schedules, eliciting support from friends to mechanisms for letting go of current habits. In identifying and establishing the personal structure, the client creates more ties to the outcome.

At various stages through a longer coaching engagement, and certainly at the end, a review of progress against the original objective will reinforce the success achieved to date, and establish ongoing patterns of behavior. The client should be asked to reflect in writing, if possible on the wins, changes in direction, future goals, and supporting structures. During the following (or closing) coaching session, focusing on the achievements and celebrating the growth will solidify the progress and provide motivation for ongoing achievement.

Conclusion

A knowledge of brain science will provide one of the major foundations of the new age to come.

Gerald Edelman (1995)

Existing coaching tool, models and systems enable clients to move forward in realizing their goals and dreams. Understanding brain functions provides a theoretical basis for the application of the existing systems, as well as recognition of processes to avoid in coaching.

Key concepts include

- Emotional importance is integral to engaging a client in change.
- Emotional importance is key in overcoming the natural resistance to change.
- Attention focused on an idea closely enough, often enough and long enough builds strength in the idea or habit.
- Attention focused on self-criticism or self-doubt limits energy and capacity for building new behaviors, and may reinforce limiting beliefs.
- Negative emotions limit the ability to create insights.
- Insights come about through building upon existing knowledge and beliefs.
- New insights are accompanied by short-term chemical changes in the brain which can be enhanced by immediate, focused attention.
- Questioning, particularly when involving the use of tools such as movement, metaphors, imagery, etc., seeks to stimulate broad areas of the client’s back integrative cortex in finding hidden or new neuronal connections.
- Coaching and clients structures reinforce and help build neuronal connections in support of the desired change.

With these concepts integrated into the coaching model, the coach has assurance that the tools employed are focused on bringing about the client’s desired change through new habits of thought and action.

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