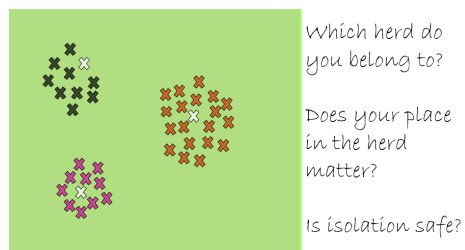


Neuroscience of Change

Brain Overview

Your brain is a fascinating organ that is like the computer of your body, yet it is far more powerful! For simplicity sake, consider that you have three compartments to your brain.

1. The brain stem (red): The function of the brain stem is to control your automated body functioning such as heart rate, temperature, blood pressure and more. It is the oldest part of the brain and all mammals have a brain stem.
2. The limbic system (green): The function of the limbic system is basically to manage incoming information from your senses. As it detects pleasurable or safe things it sends positive emotions through the brain and body to respond accordingly. However, if it detects any threats, it sends out negative emotions to prepare you to take on any perceived dangers. The limbic (emotional) brain is responsible for keeping you safe. Mammals also have this part of the brain. The emotional brain is fully functioning at birth! Emotions are all go!
3. The neocortex system (blue): The function of the neocortex is what makes you uniquely human. This is the logic brain that is responsible for reasoning, planning and anything logic. This part of the brain can override the limbic/emotion brain. However, it is not fully functioning until your mid 20's, so all of those years, emotions basically go unchecked. You will see later the trouble this causes.



Herders

Safety in Herds

Humans are "herders", meaning that our brains are hard-wired to be social with other people. Like animals in the wild, those in the middle of the herd are the safest from danger whereas those on the edges of the herd are at higher risk of being harmed, or eaten!

Because our emotional brain is responsible for our safety, it never wants to feel like it does not belong, or is not at the center of the herd. We know what being in the center looks like physically. Being at the center emotionally means that we belong and are accepted by others in the herd.

Think about times you do not feel like you belong. Your brain is in panic mode and raises your emotions. This can cause you to act in ways you do not want to such as getting upset over small things.

Your logic brain can override those strong emotions to help you feel safe again. But it is not so easy, as you will see. You have to challenge faulty thinking.



Information travels in
your brain at
approximately 270
MPH!

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Why is Change So Hard?

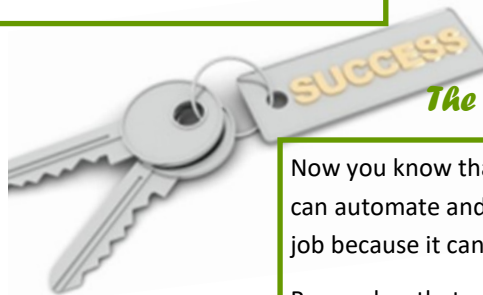
Your brain processes more information than a computer does. It is estimated that you have 70-90,000 thoughts a day! You could not possibly manage those thoughts at the conscious level so your brain 'automates' much of your day.

You emotionally react to things based on your experiences. If you have had a bad experience with a dog and come across one, your body will react with fear or caution even if you are not sure why. It is because your subconscious stores information and reacts on that information based on the past.

When trying to develop new habits, your brain will fight you because it wants to keep things automated (simple). Each time you try a new habit, your brain must slow down to consciously think about what you are doing. It does not really like to do that. Your logic brain can override the emotion brain but it takes a lot of effort. That is why change is so hard.



YOU
CAN
DO
IT!



The Keys to Managing Change

Now you know that your emotional brain wants to be in control so it can automate and work effectively. But it does not always do a good job because it can be operating on faulty information.

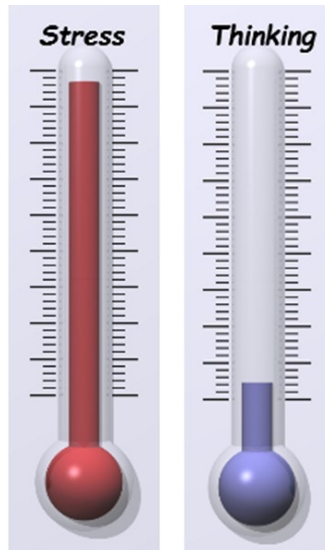
Remember that your emotional brain has been storing information since you were born. Unfortunately, the logic brain did not "turned on" yet so it could not challenge your thinking. So the brain stored old information even if it wasn't accurate.

Imagine someone who grew up in an abusive environment. The emotional brain learned that people are not safe. While that is true for the people in this particular family, it is not true of all people. Yet the brain responds to all people with caution. This can lead a person to isolate or not trust and form healthy attachments.

There are two main keys when managing the changes you are trying to make:

1. Keep your stress levels down. When stress rises, thinking lowers.
2. Challenge your thoughts. They are not always true!

When
stress
goes up,
thinking
skills go
down!



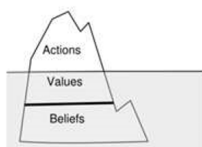
It's About What's Under the Surface

Have you ever gotten upset and wondered why? Maybe someone hurt your feelings and you exploded. Chances are it had little to do with what this person did or said, but more to do with what is going on under the surface, or something from your past was triggered.

When your brain automates its processes, it is looking for details tagged to our events. When it finds something it believes is similar, it reacts as though it is the past event without allowing the logic brain to have a say. So often you are actually reacting to old events. The person who upset you today is, unfortunately, paying the price for people in your past.

Learn to slow things down to see if your gut reaction is accurately assigned to the situation you are facing. If not, respond appropriately and then journal the past experience that comes to mind so you can deal with it separately. Do not let yesterday damage today.

It's About What's



under The Surface

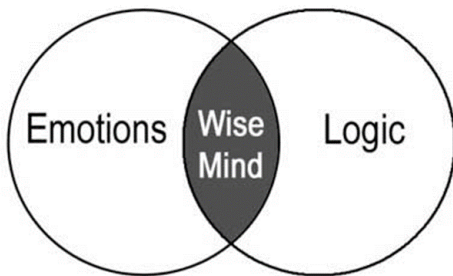
The Wise Mind

Now that you know you have an emotional and a logic brain, you can learn to engage them both so that you can make wise choices. When someone uses only their emotional brain we see a lot of drama being played out because they react to everything.

When someone primarily uses their logic brain we think of them as being cold and aloof. They seem distant and often uncaring because they are afraid of engaging emotions.

Using both brains is called using your "Wise Mind". This allows you to feel the emotions but also challenge them with logic. It is truly the best of both worlds.

Practice Out Loud



React - gut instincts that have no thoughts.

Response - thoughtful choices based on facts.

Challenge your behaviors - Use your WISE mind

Practice Out Loud

Your emotion brain learns only from what you experience. If someone told you that dogs are scary, you would most likely not believe it unless you experienced scary dogs yourself. If you had such an experience, it would be hard for someone to convince you that dogs are safe. Experience is super powerful!

Your logic brain learns from information. Sitting in a classroom will do wonders for your logic brain but has little power over your emotions. Given the example about dogs, you could take a dog safety class but still be afraid of dogs.

Having a positive experience with a dog along with the new information is the only way to override past beliefs. We call this "practicing out loud". It is like writing with your "non-writing" hand until it becomes your new normal.

Belief Systems

Belief systems are your beliefs about yourself and the world around you. The majority of your beliefs were formed as a child, long before you were able to understand them. Changing belief systems are not easy because they have existed for so long.

A belief is formed when you have an experience coupled with a strong emotion. The more times this happens, the stronger the belief is. The stronger the belief is, the harder it is to break.

Experiences + Emotions = Beliefs

Faulty belief systems limit you whereas healthy belief systems allow freedom to be you! There are things you can do to break faulty beliefs.

1. Recognize their origin - When did you first start believing this way? Identify the earliest memory that you can.
2. Validate the emotion associated with the experience - We often get stuck at the emotional state of a bad memory. Allowing the memory to feel the emotion can offer closure.
3. Separate the event from the current one - Argue with your thoughts and emotions to accept that today's event may be a

reminder to the past one but it is not connected. Work through the current event separate from the past.

4. Rewrite the belief to be more accurate - You are not being fake. Do not write a perfect statement because they are rarely true. Write the belief accurately such as, "Not all people are unsafe and I can learn skills to tell which ones are and set boundaries for those who are not."
5. Gain new experiences for the new belief - Remember that we change ONLY when we experience the new belief. You may have to do some things that are not comfortable in order to move forward. Trust the process.

Enjoy being free to be you again!



Amazing Brain Facts!

- ◇ You have approximately 60-70,000 thoughts a day!
- ◇ 95% of those thoughts are the same day after day.
- ◇ 80% of those thoughts are negative! Wow!



- ◇ Messages travel approximately 278 MPH through the body!
- ◇ There are approximately 100,000 miles of blood vessels in the brain.
- ◇ 108 bites of memory in the brain - that is greater than the stars in the Milky Way.
- ◇ The eyes can see 2.3 million shades of color (equal to 18,000 songs played on an iPod in one minute).

- ◇ It takes approximately 21 days to feel comfortable with a new habit.
- ◇ It takes an estimated 10,000 times of practice to “master” a new habit! (This includes imagining in your mind.)
- ◇ Approximately 30,000 neurons (they send messages) fit on a pinhead.
- ◇ The brain has approximately 100B neurons! That is a lot of messages.
- ◇ Each neuron fires 5-50 messages a second! That is why we have so many thoughts.
- ◇ There are approximately 500 miles of neurons in the brain.
- ◇ Each neuron has approximately 10,000 connections.
- ◇ Connections die if we do not use them. So stop using the faulty beliefs and form new ones.
- ◇ New connections can be formed when you try new habits. Keep learning.

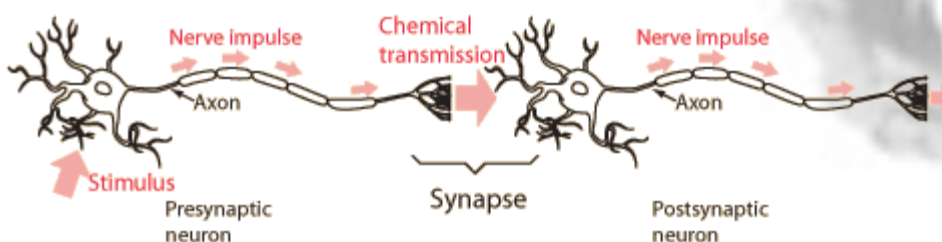


Neurochemicals 101

Your brain sends messages to tell your body what to do based on the information it has taken in from your five senses. This is done by firing neurochemicals (messengers) between cells. When the brain is working well, these messages help us to make wise choices. But our choices can be impacted negatively if either of the following happens.

1. Faulty or Limiting Beliefs: If your perceptions about the world around you are incorrect, your brain will send messages based on those beliefs which can keep you from making wise choices. For example, if you believe dogs are bad because you have been bitten before, you miss out on enjoying dogs later in life because not all dogs are bad.
2. Mis-Firing of Neurochemicals: Messages with instructions are sent by the brain using neurochemicals. If any of these neurochemicals overproduce or underproduce, choices can be negatively influenced. For example, if your brain is not producing enough serotonin, you might feel depressed when in fact there is nothing to be depressed about. On the other hand, if your brain is producing too much serotonin, it can cause seizures.

The image below shows how cells are stimulated by your five senses, the message gets encoded and based on the data received, the brain sends a message to other cells by releasing neurochemicals. Those neurochemicals send their message to other cells to make your body do what it needs to do. If we have problems with faulty beliefs or misfiring of neurochemicals as noted above, there are steps we can take



to correct the problem. Good self-care, challenging our thoughts and practicing new skills are just a few ways we can override the problems our brains might have. Medications can also help balance brain chemicals.

Set your eyes on what is ahead.

Directions:

- All questions are “behavior” based, meaning that you are rating yourself on what you “do” rather than what you “know”.
- Answer the questions below by rating yourself as follows:

0 - Does not apply to me at all.

2 - Applies to me often.

1 - Applies sometimes, but not often.

3 - I have this one down on a regular basis.

Check the boxes of the behavior you’d like to work on during this section.

Pre		Post
	I know what “herds” mean and can name my herds.	
	I keep my emotions balanced so that I can think clearly.	
	I dig under the surface to find out what I am really reacting to.	
	I regularly challenge my thinking and am willing to hear input from others.	
	I use my wise mind when making most choices.	
	I practice what I learned and have mastered many new skills.	
	I know how to identify beliefs from my behaviors.	
	I realize my brain works very fast so I slow down my thinking to challenge thoughts.	
	I can verbalize the basics of how my brain uses neurochemicals.	

“I Will” Statements

To get closer to my Big Hairy Goal, “I Will” do the following:

◇ _____

◇ _____

◇ _____

◇ _____

What I Got Out of This Section