

Why are Brain Hemispheres Important in Psychotherapy?

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When we talk about brain hemispheres, we tend to think about their differences. Whilst the left one is usually more logical, the right one is known for being the most emotional one. But how do those differences affect our day to day life? Are those differences relevant? Yes, indeed.

The human brain has its unique way of perceiving and integrating information. Each hemisphere processes it in a different way. Given a situation, our brain has to analyze incoming data quickly and effectively. Depending on which hemisphere analyzes it, the information that we consciously receive can be different. The efficiency of this analysis depends on the proper co-operation of both hemispheres.

Taking into account their differentiated characteristics, the best option our brain has is to analyze a given situation using both hemispheres, therefore giving us a global vision which includes both a rational and an emotional approach. On a regular basis, our brain's hemispheres are in constant synchrony, exchanging information amongst them, which leads us to a mental and emotional state of health. However, when a negative event occurs, our brain can become unbalanced, meaning that, that negative event gets caught up in neural networks in the right hemisphere.

A remarkable peculiarity about the brain is that the left side of our body is controlled by the right hemisphere, while the right side of our body is controlled by our left hemisphere. This is called decussation, which means that what any inputs on the left side (what we see, what we feel...) will activate the right hemisphere and vice versa. It is safe to say that neither hemisphere is better than the other one, both are required to live and each one contributes to our total understanding of what happens around us. However, individual differences have been found where some people do have one of them more developed than the other, depending on personal differences and level of education received.

We can also come across individuals who show a more developed side, this case has been called dominance. If someone has a left dominance, for example, it means that this person is more likely to perceive the information with the left hemisphere, hence understanding it in a more rational way.

Differences between hemispheres

There is a lot of evidence that supports the theory of the neural lateralization of the brain's functions. This theory states that some neural functions or cognitive processes are specialized to one side of the brain or the other.

The most common difference between hemispheres is that the left one is more rational while the right one is more emotional. Our rational part is in charge of analyzing the information step by step. It uses already stored information to create new outputs. It looks for solutions and it is temporal. It is capable of distinguish between past, present and future. It controls our ability of talking, writing and the mathematical ability. It uses both words and numbers to think. Moreover, the left hemisphere is slightly bigger than the right one.

In terms of therapy, this hemisphere is the "positive" one. It has positive resources and it is not sensitive to negative thoughts or traumatic situations.

On the other hand, the right hemisphere is much more emotional and creative. When it comes to thinking it does so with images and symbols. Thanks to this hemisphere we can understand jokes, sarcasm and metaphors. This part of the brain is capable of creating new ideas with imagination. It does not distinguish between past, present and future because it does not understand timing. It is more abstract, and it understands what it perceives in terms of emotions and feelings. It also processes information globally and then it takes the parts out of the total. It can recognize melodies and it is in charge of the visual tasks.

The right part has some astounding abilities, but it also presents certain disadvantages. It has less resources and is also in-charge of the more uncomfortable feelings and traumatic memories. It is more sensitive to traumatic situations and due to its lack of capacity to distinguish time, something traumatic that happened many years ago can still affect in the present.

Brain hemispheres and trauma

Taking this under consideration, it is very important in therapy to understand how the hemispheres work. The way we process information affects how said information is going to affect us in the future. The information processing system processes all the elements of our experiences and stores memories in an accessible and useful form. When a traumatic event happens, our processing system becomes impaired, thus it does not work correctly.

This may occur due to an interference of negative feelings which prevents information from being processed the appropriate way. The memory of the traumatic event is then stored incompletely. Some of the connections are not formed, which leads to certain elements remaining unprocessed. The memory stays in the right side of the brain leaving the left hemisphere out of game.

As it been said before, the right hemisphere does not distinguish time, which means that the person that has suffered a traumatic situation, is going to relive that event when thinking about it or when the memory is triggered by similar stimulations. When talking about trauma, we usually think about major trauma problems. "Big" events such as rape, physical abuse or accidents, but actually, almost anything can be a traumatic event. What makes a traumatic event traumatic is the way the person experiences it. Anything that is lived with vehemence could be traumatic [1]. Small traumas could for example be being teased by one's peers or disparaged by one's parents.

It is fairly common to see people seeking therapy due to traumatic situations they may have experienced. In order to be able to get over a negative event, all the information that has been caught in the right hemisphere needs to be processed. The brain needs to be able to access the resources of the left hemisphere in order to have a more completed view of the negative or traumatic event.

Nowadays, there are techniques that help restore balance and brain synchronization. These techniques are used in therapy.

How to restore brain synchronization

Few decades ago, a new technique, called Eye Movement Desensitization and Reprocessing (EMDR) was developed by Francine Shapiro. This psychotherapy treatment was originally designed to alleviate the distress associated with traumatic memories. This type of technique facilitates the accessing and processing of traumatic memories. It brings them to an adaptive solution. Shapiro [1] hypothesizes that EMDR therapy facilitates the accessing of the traumatic memory network. Accessing to that network allow the brain to enhance the way it processes the information making new associations forged between the traumatic memory and more adaptive memories. These new associations lead to a complete information processing, a new learning and a reduce of emotional distress. In the same way, it helps changing negative beliefs resulting from the traumatic situation.

By stimulating the brain in a bilateral way, the hemispheres can co-operate again while facing a traumatic memory. This allows the emotional part to get access to a more rational part. By doing this, the person has a new approach to the negative event changing the thoughts linked to that event or situation as well.

The brain can be stimulated bilaterally in different ways. When using EMDR, the most common way is to stimulate the brain with eye movements. After the clinician has determined which memory to target first, he asks the client to hold different aspects of that event or thought in mind and to use his eyes to track the therapist's hand as it moves back and forth across the client's field of vision. Another way to stimulate the brain bilaterally is with hand-tapping or with audio stimuli.

In a regular basis, the way our brain works it is not highly important. It knows what it has to do and we do not need to do anything to help it work properly, but when an individual experiences a traumatic or negative event, it is important to understand how our brain and our hemispheres work and react.

Bibliography

1. Shapiro F. "Eye Movement Desensitization and Reprocessing: Basic Principles, Protocols and Procedures (2nd edition)". New York: Guilford Press (2001).

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