How Language Impacts the Brain

The brain is a diverse and detailed system that functions and gets excited at stimulation. A wonderful way of stimulating a brain and exciting the neurons is learning a language. This affects different areas of the brain and can show the brain lighting up from stimulation. Through specific areas being dedicated to language learning, identifying the stimulated areas can also identify how learning languages can impact the brain.

The brain is made up of many different sections, however, only a few are dedicated to language learning. The brain bounces between both hemispheres when intaking the information verbally given. In this process the left hemisphere acts as the processor, while the right hemisphere stands in as an output for verbal communication. In simple words, the left hemisphere is the factory and the right hemisphere is the delivery truck.

To focus on language production, the frontal lobe processes and forms the phonological aspects of a language. This leads to pronunciation and verbal output of a language, both native and learned. In the idea of a factory, this would be the customer service desk. It both processed the information from outside and inside to produce the outward verbal communication needed. In detail, the left temporal lobe produces grammar and grammar comprehension. To understand the grammar given, the angular gyrus lights up to process new linguistic concepts and new vocabulary given. The context of new vocabulary and the meaning of new grammar, both input and output, is under the responsibility of the Wernicke’s area. Both the Broca’s area and the Wernicke’s area are responsible for processing and understanding language. Both these areas connect the frontal lobe to the posterior temporal lobe. In the factory analogy, these two areas would be the sales floor and the back room. The two areas work together to smoothly operate in both intake and output for the language store. The last area of the brain to look into would be the corpus callosum. The corpus callosum is the area that connects both hemispheres and relays the messages in the brain. It also acts as the mediator around language processing, input and output. In the factory analogy, the corpus callosum would be the factory manager. The factory manager processes the information, although not doing the individual tasks, it relays all information and directs the processing/output of the language factory. “Regions in your frontal, temporal and parietal lobes formulate what you want to say and the [motor cortex](http://neuroscience.uth.tmc.edu/s3/chapter03.html), in your frontal lobe, enables you to speak the words. Most of this language-related brain activity is likely occurring in the left side of your brain. But some people use an even mix of both sides and, rarely, some have right dominance for language.” (What Brain Region Controls Our Language, *The Conversation*, 2 Mar. 2020).

In conclusion, the brain lights up and is stimulated in so many areas the brain essentially lights up like a Christmas tree. The brain uses primarily the left hemisphere, however, both sides of the brain are used in language learning/usage. The entire brain is used for input, processing and output. In an analogy, the factory is used to full capacity to receive and output all the language packages. Overall, the brain is fired from the inside to just about every area of the brain. The impact of language learning and language usage in the brain is stimulating the entire brain. The brain experiences cognitive benefit, psychological benefit, and mental benefit. The impact of learning language within the brain is overall only beneficial for growth within the brain. Physical growth in white matter but also, it’s good for maintaining the brains functions.

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