enlargement vs. shrinkage

BEFORE THE AGE of GPS or iPhone Maps, London taxi drivers relied on their memories. They developed what was coined "the knowledge." Developed over centuries, the winding, crooked streets of London resemble a maze more than neat perpendicular blocks. Some are paved. Some are cobblestone. There are the major thoroughfares and then the seemingly narrow alleyways. Needless to say, London is a difficult city to navigate by car. Not more than a decade ago, beginner taxi drivers had a huge memory task of learning the streets of London. They had to know the most efficient ways and alternative routes of getting from one location to another.

When the brains of London taxi drivers were scanned and compared with scans of non-taxi drivers of similar gender and age, a noticeable difference presented itself. A part of the brain called the hippocampus was found to be significantly larger in the taxi drivers than in the control group.

We all know that the brain is an amazing organ with incredible potential. Like many of the resources mankind is entrusted with, the brain often is not taken care of as it could be to preserve and even heighten its functionality. "In the course of a lifetime more than 18 million brain cells and their connections die every year because of disuse and abuse."[1] Additionally, the fine balance of brain chemicals that translate into mental peace, balanced thinking, the experience of joy and contentment, become recalibrated largely as a result of what we drink, inhale, or in some way allow entrance into our bodies. Worldwide, the use of alcoholic beverages and street drugs has contributed to this more than any other factor.

Alcohol and drugs directly alter blood flow to the brain and brain chemistry. Alcohol crosses easily into and out of the brain, manipulating neural transmission. Even at low levels of ingestion, alcohol affects perception, information processing, learning, judgment, reaction time, sound processing, and peripheral vision. Most seriously, it reduces an individual's awareness of being impaired. Some brain chemicals undergo a temporary surge followed by a corresponding plunge. Other brain hormones are depressed, not just during direct exposure to the substance, but become retuned to a lower level. One night's use of the street drug called ecstasy can wipe out half of the serotonin producing cells in your brain. Tobacco use resets normal dopamine levels lower than before the first puff was ever taken. Paradoxically, these two hormones are known for promoting happiness and pleasure.

Making marijuana legal does not lessen its impact on the brain. SPECT scans of the brain reveal

that cannabis use results in lack of blood flow and deterioration to portions of the brain related to judgment, direction and supervision of behavior, motivation, memory, mood, and, hence, lack of function of those parts of the brain. Lack of blood flow and deterioration equate to a brain change, and hence who you are. Neuroscientist and psychiatrist Daniel Amen, M.D., has even observed narrowing of blood vessels in the brain and reduced brain activity in the prefrontal cortex and temporal lobes as a result of large amounts of caffeine use. These biological changes can manifest themselves psychologically as well as cognitively as these are functions of the brain.

The intent of taking these substances is to experience the euphoria resulting from elevated dopamine levels. Because the aftereffect is a reduction in dopamine levels when one is not drinking or smoking, the individual is driven to partake of more. While the quest is to get more of the dopamine release, other brain chemicals are being altered at the same time that enhance feelings of depression. Research suggests that males are particularly susceptible to the use of alcohol. Its effect on dopamine is more significant for men than women, which may account for men drinking more than women on average. Alcohol does not require years of ingestion to do damage. Signs of serious damage to the temporal lobes of the brain have been seen in 18 year olds. Alcohol accelerates brain aging and interferes with the capacity to reason, remember, and think critically.

A RIGHT BALANCE OF THE MENTAL POWERS DEPENDS IN A GREAT DEGREE ON THE RIGHT CONDITION OF THE PHYSICAL SYSTEM.

By partaking of these substances we are literally changing ourselves. Through the use of CAT scans, researchers have found shrinkage of the brain even in light to moderate drinkers. This shrinkage includes the frontal lobe of the brain which is thought to be the spiritual seat of our soul, where moral values and the power of the will reside; shrinkage as opposed to enlargement.

I do not think that the London taxi drivers of a decade ago were born with enlarged parts of the brain thus making them gifted at memorization. Rather, as a result of training, learning, and development, the hippocampus of these men grew rather than shrunk. It used to be thought that once brain cells died, there was no hope of restoring them. We now know that this is not the case. Shrinkage can be turned around to enlargement. A right balance of the mental powers depends in a great degree on the right condition of the physical system. The bottom line is that the biological functioning of your brain will impact its cognitive, psychological, and spiritual functions, and hence who you are.

If acquiring "the knowledge" of London topography enlarged the hippocampus, how much more will the mind broaden and improve through gaining the knowledge of God's word? Through its study, "the highest faculties of the human mind are called into intense activity. No one can engage in such study without developing mental power."[2] Coming in contact with its Author will enlarge your brain as nothing, and no one, else can.

1. Elden M. Chalmers, Ph.D., *Healing the Broken Brain*, p. 58.
2. Ellen G. White, *Education*, p. 124.

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