

Neurofeedback and Other Brain Based Change Technologies

Technology* is often portrayed as the antithesis of new age goals and values. Technology is often seen as contributing to our separation from all things natural and good. The list of negative effects from technology is long indeed and we are well advised to be wary of advances in the hardware and software we use in our everyday lives to make phone calls (radiation from cell phones), type a newspaper article (EMF radiation from monitors, repetitive strain injuries from keyboards, etc.), or provide ourselves with musical entertainment (unnoticed hearing damage from loud headphones).

There are, of course other uses of technology that may actually help people reach “higher” levels of consciousness. Many people find themselves resistant to “new age” ideals when they are presented in the context of traditional approaches such as religion, yoga, Buddhist meditation and other spiritual practices. Some of these people find it easier to accept the benefits of introspection, meditation, breath awareness, relaxation and transformative experiences when they come in the form of a technological approach.

There are also many people that new age practices don't reach. Extreme examples of such people are criminals in prison for capitol offenses. Mostly men, often with little remorse for their crimes and little empathy for their victims these people cost society a great deal and there is often little hope of “rehabilitation”.

Interesting characteristics begin to emerge when we look at these individuals a little more closely. Most (more than 60%) qualify for a diagnosis of attention disorder (ADHD) and/or learning disability. Most came from some form of abusive or neglectful environment. Sometimes this abuse and neglect was purposeful but mostly it was a byproduct of harsh socio-economic circumstances and/or patterns of family abuse and despair developed over many generations.

The results of these early experiences produce a particular set of neuro-physiological characteristics in these men that predispose them to a variety of behaviors including substance abuse (again the vast majority of these individuals have substance abuse histories). The resulting combination of factors create people who are much more likely to commit violent crimes than the average person.

So what is “wrong” with these people? Recent evidence from brain imaging studies reveals several areas that are affected by such life experiences. Studies of abused and neglected children (both with and without physical abuse) show a significant lack of maturity in the left hemisphere of the brain where much of our cognitive processes occur including memory formation and retrieval, comparing new information to what we have previously learned and several aspects of emotional and behavioral self control. Similar studies have also identified chronically heightened vigilance (fight / flight, readiness for danger, etc.) in children and adults raised in abusive or neglectful environments. There is also a lack of development in frontal lobe areas of the brain responsible for empathy and compassion. Substance abuse (including marijuana) damages the same areas.

It is clear that such individuals will have less overall maturity and less ability to learn from past experiences (connecting certain behaviors to past negative experiences is supposed to deter crime – if your brain can't accomplish this task then punishment doesn't work). This kind of subtle, developmental brain damage increases the tendency to anger and aggression while at the same time it weakens judgment, planning and self-control. It also reduces the capacity for empathy and compassion that helps most people curb such urges.

Modern technologies, specifically brain based training approaches such as neurofeedback, audio visual entrainment (AVE), hemoencephalography (HEG) and others have shown exceptional results when used with such individuals. These same technologies are also being used to develop optimum performance in professional athletes, to help children with ADHD and learning disabilities, to help people with anxiety, depression, migraine headaches, sleep disorders, PMS and much more.

The fascinating thing is that these brain-training technologies encourage the same kinds of changes as traditional spiritual training approaches. The changes just happen faster and without the quasi-religious trappings that can trigger resistance in a significant number of potential practitioners. The benefits from practice of the “spiritual” disciplines are well documented. Benson and others have demonstrated lowered blood pressure, better sleep and better overall health while more recent studies have shown improved post heart attack recovery rates and fewer repeat heart attacks among those using breathing, relaxation, meditation and similar practices.

Specific brain based training techniques can identify and directly address neuro-physiological development issues with a precision and speed unmatched by older approaches. These interventions are specific enough to abort a migraine headache in progress without drugs and general enough to promote the development of empathy and self control in individuals with very little of either.

One of the findings common among several studies using brain training with prison inmates and persons abusing drugs is that participants develop feelings of remorse about their actions and empathy for their victims. This obviously doesn't constitute a “cure” and yet it is a hopeful sign that these individuals can overcome neurophysiological damage and begin to make better decisions with a properly functioning brain.

What then can these technologies do for everyone else? The evolution of consciousness is an individual as well as a group process. Each individual who expands his or her consciousness or awareness will have an effect on many others. High tech brain training offers a more accurate, effective, verifiable way to accomplish this task. It may be another doorway to the new age.

The only caveat regarding this issue is the fact that unscrupulous people have developed “technologies” that seek to capitalize on the general public's unfamiliarity with these approaches. They offer “amazing cures” by inducing “vibrational changes” or other magical results in the client. True brain training technologies are just that, training. There is nothing magic or instantly curative about them. They require the same kinds of training, as do traditional meditation approaches. The only difference is that the technologies allow a more precise, targeted training process that produces results more quickly. It is important to find a practitioner with training and experience, using equipment that has solid, published research backing, not just client testimonials.

Technology – processes by which human beings fashion tools and machines to increase their control and understanding of the material environment, or the **“art of crafting”.*

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