Fitthink: Saving Humanity, One Brain at a Time

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The recent dramatic advances in artificial intelligence (AI) have brought forth a host of intriguing possibilities of ways to determine how people think and what they think about. Brain waves have been analyzed for close to 100 years, primarily to diagnose seizure activity. Technical advances allowed the introduction of electrodes to be inserted onto or into the brain itself, allowing for recordings from variably sized regions ranging between several millimeters to single cells. These invasive recordings have been necessary because the skull interferes with any recording within it, but also due to the folds of the brain itself, so that electrically active cells are not near any surface that may allow non-invasive access.

Even so, the complexity of analyzing multiple regions simultaneously has been unachievable until recently. AI has changed things enormously so that recordings taken from outside the skull can reliably distinguish a variety of thought processes, such as trying to remember, planning, emotional reactions, daydreaming, and problem solving. While each of these categories encompasses a huge number of possibilities, the general structure of brain wave activity in different regions provides a mechanism shown to be increasingly reliable at classifying thinking within particular categories, although some brain activity falls into more than one pattern.

Fitthink – a cognitive measuring leap

New devices have been invented to capitalize on the expanded capability of this AI breakthrough. One device, now nearing marketing release, is the Fitthink (patent pending, JH Friedman). What Fitbit has brought to the world of physical fitness, Fitthink is expected to bring to the world of cognition and memory. Fitbit is thought to have enhanced the general physical "fitness" of Americans by 20% in those who own one, by helping them become more active, as they aim for a daily goal of 10,000 steps. It works by "inducing" exercise. Two large, prospective, long-term European studies have shown a dose-response inverse relationship between steps taken/day and all-cause dementia up to 8,000 steps/day, after which additional steps do not add further benefit. In other words, people who walked more were less likely to develop dementia. Fitthink was developed with the idea that

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if walking reduces the risk of dementia, then actual thinking would be likely to reduce it even more. It is likely that Fitbit plus Fitthink will be synergistic and early testing of the Fitbitthink is promising.

As the reader knows, there are currently many attempts to enhance cognition and memory, as in numerous computer games, jigsaw puzzles, writing exercises, and do-it- yourself (DIY) books that are readily available, but none can provide "real-time" feedback. There have been numerous brain-wave analytic tools marketed to enhance brain-wave "synchronization" or to enhance the speed of background cortical activity, none of which have been proven to have any benefit in studies comparing baseline to outcome on cognitive testing. Unlike other approaches, Fitthink only measures actual thought processes and does not alter brain function. It is a measuring tool that can be used to assess actual interventions. It can measure numbers of thoughts/d as well as time spent thinking. It indirectly enhances thinking by providing feedback just as Fitbit encourages exercise by providing objective data.

Similar to other wearable devices for activity monitoring, when no thought has been detected after one hour, a gentle electric shock followed by a soft verbal reminder, "think!", is triggered. The length of time between thoughts or "volume" of thoughts can be easily adjusted to set appropriate goals for each person. Scores summarizing a day's thinking activity are summed up with percentages of time spent in the different activity levels, varying from "brain freeze" (fewer than 5 thoughts/d), "brain fog" (6–10 thoughts/d), "average" (11–15 thoughts/d), "cruising"(15–50 thoughts/d) to "brain storm" (51+ thoughts/d).

Early data & limitations

Once the device was shown to be reliable, it was tested on various populations. One study showed that small children think hundreds to thousands of thoughts per day,[1] but only children old enough to communicate could be involved in testing, so no children under age five were tested. As children matured, their total number of thoughts per day slowly dropped so that the average American in high school had an average number of 0.5 abstract thoughts/d.

Ai Artificial Intelligence, IoT Internet of Things, digital software development. Futuristic technology innovation, person using smartwatch with brain representing artificial intelligence.

One criticism of the data focused on the ability of Fitthink to distinguish between everyday thoughts, such as, "What's for dinner?", serious thoughts, like, "What TV station should I watch now?", and abstract thoughts, such as, "Why is the sky blue?" This hurdle has been surmounted and data will soon be publicly available to prove this point.

Because of patent and marketing concerns, most Fitthink data is not yet publicly available, so only limited data can be shared, much of it not yet confirmed. Studies are ongoing with an aim of applying for FDA approval within the next two years. An open label trial using a convenience sample of 100 non-demented adults with mini-mental state examination (MMSE) scores greater than 26, and no history of central nervous system injury, volunteered for this cost-free study. Electrodes were attached to four locations on the scalp, symmetrically opposed, at the intersection of Gall's Brachycephalic (width) and Dolicocephalic (length) lines[2] as defined in classic phrenology texts, to each half of the skull. Subjects wore these continuously for 12 weeks. Half were randomly assigned to read books that had provocative topics with questions asked at the end of each chapter that required thought (eg, What was the protagonist thinking about before he stole the bread?). The other half had non-provocative topics included in their reading sample, with questions that required no abstract thinking (eg, What TV shows will you watch tonight?).

Results

Results were analyzed using the standard Fitthink brain-thought software package (patent pending), and were reportedly "encouraging." One study of college professors who compared Fitthink results to self-reported diaries found that 40% of time self-recorded as thinking was actually spent in stages 1 and 2 sleep. The National Institute of Health is evaluating the device to monitor grant recipients for proof of thinking when working on their funded projects.

Potential investors may contact this journal or the *Journal of Retractable Results* (JRR), sponsors of Fitthink and Fitbitthink. Supplementary material, such as Fitthink data obtained on the author while composing this article, is readily available using the telekinetic tools described in his book, *Unleashing Your Mind*, which is free to all subscribers to JRR and the RIMJ. ❖

References

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2. Gall F, Spurzheim JC. Cranioscopy: A new advance in brain science. J Ineluctable Res. 1803;13:6-147.

Disclosures

Conflict of interest: The author is the Editor-in-Chief of Open Source, LLC, Journal of Retractable Results. (Motto: Pay to publish, no charge for retractions)

April Fool's column (in case you didn't notice)