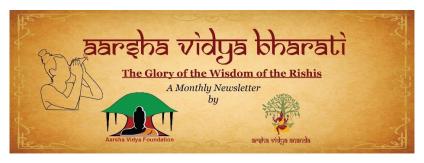
## Aarsha Vidya Bharati - Sep 2021

A monthly newsletter that will bring you more happiness, more wisdom and more freedom



This is one of many articles from our monthly newsletter. Access the Sep 2021 issue or read any of the articles.

## Can Vedanta Rewire the Brain?

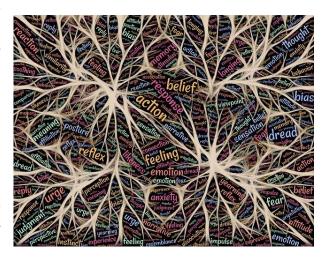
By A.S., USA, Neuroscientist

In the course of our Vedanta studies, occasionally we may wonder, "Can I really develop new habits and new ways of thinking or cognizing?". What we are actually asking is "Can Vedanta re-wire our brains?"

While the  $s\bar{u}k \not= ma$  f(s) often referred to as the subtle body including the mind, cannot be mapped to the brain, the brain may well be considered a part of the  $s\bar{u}k \not= ma$ .

**Neuroplasticity** is the ability of the brain to adapt or re-wire in response to changes in its environment, such as when it repeatedly performs a task, or when it learns. Neuroplastic changes occur at all levels (e.g., cellular, neural) and throughout life.

first consider neuroplastic Let us underlying formal spiritual changes practices. and Yoga meditation practices, which have been most studied have shown numerous positive effects on brain structure, including increased grey matter and greater brain thickness and capacity in brain areas having to do with learning, cognition and memory. Meditation does not just improve **brain structure**, it also has a positive effect on **brain function**: different kinds of meditation activation in brain increase areas



responsible for focus, memory, attention, self-regulation, self-monitoring, cognitive control and the cognitive flexibility needed to adapt to different situations.

Meditation quietens the mind, including the activity of the brain's **default mode network** (which is responsible for our self-referential thoughts and ruminations

about the past and future), resulting in greater well-being. And even if the mind wanders, it's easier to bring it back to focus due to the re-wiring that has taken place in the form of a greater connection between brain areas that regulate self-monitoring and cognitive control. Another very interesting form of neuroplasticity has been referred to as 'Sanskrit effect'.

The Sanskrit effect is the larger brain capacity (75% increased grey matter), increased attention and verbal memory documented in pandits in India who regularly chant Sanskrit mantras and shlokas as part of our ancient oral traditions. Chanting, as part of a spiritual practice, also increases delta brain oscillations important for neuroplastic and restorative processes.

Thus, spiritual practices if done consistently and over the long-term, will induce beneficial and protective changes in the structure of our brains as we age. The same practices will improve the functioning of our brains with respect to increased focus, attention, memory, cognitive flexibility and control, self-regulation and selfmonitoring.

This enhanced cognitive functioning provides the **preparatory cognitive frame-work** needed to both grasp and assimilate self-knowledge.

Overall, there is clear consensus in the scientific literature that formal practices like asanas, meditation and chanting re-wire the brain. So, the next question that may arise in us is: "Can spiritual practices like listening, reading, writing and contemplation re-wire the brain?" While there is less research in this area, the principles of neuroplasticity tell us that any task when performed consistently, with discipline and dedication, will re-wire the brain.



Engagement and repetition are some of the best ways to induce neuroplastic brain changes resulting in new habits. Like we exercise our muscles to make them stronger, the brain can also be trained. Repeated **reading or listening** to Vedanta texts, frequent **contemplation** of their meaning either mentally or in writing, and constant **application** of what has been learned in everyday life, will strengthen those underlying brain pathways.

However, the brain needs to be engaged **effectively** by our practices (and not distracted by multitasking!) for plasticity to be induced. And on the flipside, if existing habitual tendencies (that we want to minimize) are not reinforced, then their underlying brain pathways will get weaker, resulting in their reduction.

Of course a few thousand years ago, when Arjuna shared that he thought of the mind as impossible to control, as the wind, Krishna replied –

श्री भगवानुवाच असंशयं महाबाहो मनो दुर्निग्रहं चलं। अभ्यासेन तु कौन्तेय वैराग्येण च गृह्यते।।6.35।।

śrībhagavānuvāca asamsayam mahābāho mano durnigraham calam abhyāsena tu kaunteya vairāgyena ca grhyate 116.3511

No doubt, Arjuna the mighty armed! The mind is agitated and difficult to master. But Kaunteya, it is mastered by **practice** and objectivity.

These teachings of the *Bhagavad Gītā* are further fortified by modern science as our growing knowledge of neuroplasticity can be our **secret weapon**— that we use to develop and maintain our habits of thinking and behaving for a healthier and happier life!

[2] The  $s\bar{u}k$ ṣma śar $\bar{i}$ ra is that which is made of the ungrossified five great elements, is born of the (past) right actions, the instrument for the experience of pleasures, sorrows, etc., and that which has seventeen parts, viz., five sense organs of knowledge, five organs of action, the five pranas, the mind, and the intellect.