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DISCUSSION

A qualia-centric approach to Ayurveda and Hindu knowledge systems can address modern science's blind spot

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Abstract

In this paper, I argue for approaching Ayurveda and Hindu knowledge systems in a qualia-centric manner, the way their originators intended. The materialist assumptions that underlie modern medicine, while undeniably effective, are not the only way to understand the body, just as the Western tonal system is not the only way to approach music. Using the wrong metaphysical lens is the root cause behind many seemingly intractable debates on the validity of Hindu knowledge systems. At the same time, it is important to have externally verifiable benchmarks — quality, reliability and efficacy — as universal metrics, and every healthcare provider must seek to meet them.

Introduction

Contemporary academic discussions on Ayurveda, as in the recent issues of this journal [1–3], distinguish "logical" parts of Ayurveda from their "magical" precursors in the Atharva Veda, and a parallel "magico-religious" stream involving tantra and mantra. I believe this is driven by an incomplete understanding of the unified intellectual foundation of Hindu civilisation. Instead of treating them as just a poor man's version of European science — whose value exists to the extent that parallels can be found in Western journals — we must approach them the way the Hindu originally approached them — by being qualia-centric.

Qualia are the "introspectively accessible, phenomenal aspects of our mental lives" [4] which cannot be communicated through language. For example, the redness of a rose cannot be expressed to your friend in words; at best, you can liken it to other red items, but the experience of redness is a private, subjective phenomenon. A qualia-centric approach will prize the first-person subjective experience as fundamental, instead of trying to explain it away through verbal sleights of hand. Such an approach — by integrating insights from consciousness research and neuroscience — will help resolve previously intractable problems created by the encounter between Western modernity and Hindu knowledge systems.

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Why qualia-centricity?

The reason for choosing this particular approach lies in the fundamental difference between Hindu knowledge systems and "modern" Western science: Where do you draw the line between consciousness and matter?

In the mainstream 19th–20th century Western scientific world view, the basic divide is between mind and matter, taking after Descartes [5]. This relegation of human experience to a lower order of reality by mainstream Western science has, of course, been challenged by multiple movements centred around brilliant thinkers, such as the phenomenology of Husserl and Merleau-Ponty [6], the gestalt psychology of Wertheimer and Kohler [7], and the neuro-phenomenology of Francisco Varela [8]. Though these movements have been successful in their niches, they have not changed the fundamental assumptions of mainstream Western science — seeing the world as a large, complex machine.

This has resulted in science being conceptualised in the Western world as primarily the study of matter, its interactions, and its organisation. This science strives to keep its study of matter and their interactions as independent of a conscious observer as possible. So pervasive is this assumption that a recent book calls human first-person experience the "blind spot" of modern science [9]. The authors make a convincing case [9: p 27–9] for this phenomenon having been magnified as a side effect of the overwhelming success of classical physics between the 17th and 19th centuries in Europe, but they ultimately trace its roots back to the metaphysical conceptions of the classical Greeks and the Abrahamic monotheistic cultures that followed.

On the other hand, the Hindu understanding — based on the Vedic system of Samkhya — makes a primary distinction between consciousness and "everything else". Therefore, the Hindu puts the mind firmly in the realm of *prakriti,* which may be loosely translated as the "natural" or "material" world. For the Hindu, then, fluctuations of the mind and the mental

qualities become part of the "external" world, and thus amenable to scientific investigation. Everything — be it "external" objects, or mental phenomena, or emotions — becomes pregnant with meaning. Reality is understood as consciousness plus things which are reflected within the consciousness, creating a web of meaning. This approach to understanding our world has been termed "semantic science" [10, 11]. Please refer note at the end for more information [1] [12–14].

When the "real" world is seen primarily as independent, atomistic, mathematical objects interacting with each other in a void, science becomes focused on the quantitative and tries to exclude qualities and meanings as much as possible. On the other hand, when the "real" world is seen as primarily the interaction of an observer with the observed, then the science that develops becomes more about qualities and meanings, and less about quantities.

Neither of these approaches is wrong per se, but it is obvious that sciences starting from these two radically opposed points will look very different and may seem mutually incomprehensible. I am not the first one to make this point. The historian and philosopher Mircea Eliade in a paper presented in the "History of Sciences" section of the International Congress of Historians (Bucharest, Romania 1932) discussed the "efforts of the Samkhya and Vaisheshika to construct a physics based on the systematic definition and classification of qualities, while almost ignoring quantities" [15]. Frank, Gleiser, and Thompson in their introduction to their book *The Blind Spot* go even further, stating that "the downplaying of our direct experience of the perceptual world while elevating mathematical abstractions as what's truly real is a fundamental mistake… Concrete experience always overflows abstract and idealized scientific representations of phenomena… The failure to see direct experience as the irreducible wellspring of knowledge is precisely the Blind Spot." [9]

Modern Western science has made great strides by relegating the inner, subjective aspect of our existence to the background. The external object — whether a ball, a bone, or a neuron — is isolated as much as possible from its surroundings and from the subjective gaze, and studied in as detached a manner as feasible. This approach has proven highly effective in the case of simple and linear systems. However, selectively isolating those parts of reality which are easier to study results in sacrificing accuracy and depth.

Hindu knowledge systems, on the other hand, are qualia-centric, because they are primarily derived from systematising the experiences of people capable of advanced meditation, who used their expanded cognitive faculties to study the external world, their own bodies, and their own minds from the first-person perspective.

Now, it is not my intention to claim that there are no examples of qualia-centric approaches in the entirety of Western science. This has become more common, especially over the last several decades, as Eastern thought has deeply penetrated the West. A well-known example is neuro-phenomenology, pioneered by Francisco Varela based on his study of Buddhism. One neuro-phenomenological study, for instance, found that epileptics are able to reliably perceive changes in their subjective experience prior to having a seizure, and that electroencephalogram (EEG) findings reflect these changes [16]. However, my contention is that this represents a minor stream in Western science, whereas it is the central focus of Hindu knowledge systems.

Examples of qualia-centricity in Hindu thought

The crux of the difference between modern medicine and Ayurveda can be understood when we model the former as a medical system beginning in cadaveric dissection, while Ayurveda begins with the live, conscious organism. Neither of these approaches is wrong, but insights from one will not be easy to map to the insights of the other.

Take, for example, the fundamental aspects of the physiology of tantra and Kundalini Yoga — the *chakras* and *nadis*. The *chakras* and *nadis* are not to be found when doing dissection on a cadaver, but they are on your own body, after sufficiently "cleansing" the lens of your attention through rigorous *sadhana*. To search for chakras through a dissecting microscope, fail to find them, and then dismiss the manuals of tantra and Hatha Yoga as superstition would be a classic case of category error

Similarly, when Ayurveda says there are various *agnis* in the body [17], this does not mean that you can find them with a thermometer or an infrared camera. They are perceptions you will have in advanced meditative states, and those perceptions will share some important similarities with the perceptions generated by a fire. The scientists who identified it called it *"agni"* because they found it shared an essential similarity (on the perceptual/qualia plane) with the physical fire that we are all familiar with. Not because it is literally a "fire", with oxidation and exothermic reactions.

When modern scientists deal with the *Pancha Mahabhuta,* classically, *Prithvi, Jala, Tejas, Vayu,* and *Akasha,* they are apt to see in them an archaic chemistry that has been superseded by the modern periodic table. In my opinion, it is better to analyse them from a qualia-centric, first-person point of view. The *Pancha Bhuta* are connected to the five classical senses in Kundalini Yoga, and therefore, in my opinion, are best understood as distillations of the inputs of each of those senses.

We live in a virtual-reality illusion generated by our brain and our sensory apparatus; the *Pancha Bhuta* are the components of that illusion, the building blocks through which it is generated. They interpenetrate each other, so that they are not discrete and localisable. But they are broadly understandable in this way: *Akasha* is not "space" as in the place you send a rocket; but perhaps could be understood as a potential space of meanings such as, say, the spectrum

of colours, or the space that encompasses all the possible configurations of a complex system. It is also connected to the spoken word and to the sense of hearing.

Language is possible only because it involves placing meaning in a hierarchical space, and perhaps this could be extended to all forms of outward cognition. *Akasha tattva,* therefore, is fundamental among the five *Mahabhuta.* Starting from the bottom, *Prithvi* is linked to smell, to the anus/defecation, and to the *muladhara* or root *chakra. Jala* is said to be connected to the sense of taste, to the urogenital organs, and the functions of micturition and sexuality. *Tejas* links to vision, the feet, and walking.

One might wonder why the feet, which are at the bottom of the body, should come "higher" than the anus and genitals. From my perspective as a neurologist, the simplest explanation is that embryologically speaking, the feet arise from a "higher" position on the mammalian *Bauplan* than the anus and genitalia. The remnants of this origin are still evident in the fact that nerve supply to the feet is from the lumbar nerve roots, whereas the anus and genitals rely more on the sacral nerve roots. Therefore, when an advanced meditator explores their embodiment, they will notice that the legs seem "higher up" than the anus and genitals, even though on the physical plane they are positioned lower.

The idea of reality as being composed of four or five "elements", similar to the *Pancha Bhuta* theory, is widespread across ancient civilisations. Through Buddhism, the Indian system spread to much of Asia, including Japan. The Chinese civilisation — prior to contact with Buddhism, had developed the idea of *Wuxing,* the "five agents", which were Earth, Metal, Fire, Water, and Wood [18]. The Greeks had a system dating from pre-Socratic times, which understood the world as being composed of Earth, Water, Air, and Fire [9, 19]. While I cannot comment on whether other civilisations also had similar correlations between the elements and particular sensory and motor systems, it would be interesting for scholars of those civilisations to analyse them through this lens. If this is indeed the case for other civilisations too, this might provide a valuable tool for archaeologists attempting to reconstruct world history.

The idea that we can unlock different perceptual models of our embodiment through introspection is not surprising to a neuroscientist. Modern neuroscience has shown that our nervous system successively maps the body at various levels [20]. One such map in the somatosensory cortex is the well-known "sensory homunculus".

However, such maps exist in multiple recursive patterns, at various scales, with varying degrees of detail. For example, in the insula, there are maps of the heart [21], colloquially termed the *"cardunculus".* Presumably, we are "consciously" aware of only some of these various maps, while others influence our perception of our embodiment at subconscious levels. Through sufficient internalisation of attention, it would be possible to become aware of more such maps and how they affect our functioning.

While externally focused, third-person medical science has one physical body to deal with, a qualia-centric, first-person medical science such as Ayurveda or tantra starts with a highly complex, very malleable web of sensory representations. Some of it may not make sense when compared directly to modern ideas of anatomy and physiology, because they are on different "planes". Seen thus, it makes sense when orthodox practitioners claim that the fundamentals of Ayurvedic physiology will never be "transcended" by modern science. The only way to transcend them would be to have equally powerful meditative insight, not the kind gained by looking through a microscope or magnetic resonance imaging (MRI) machine.

For the Hindu, the subtle was taken as more "real" than the gross and the concrete. What was externally apparent was most illusory; progressively greater access to reality, then, was possible only through redirecting attention inwards. This was not merely axiomatic; the more subtle planes were considered more "real" because they had greater causal power. Modern scientific models of top-down causation [22] may have some useful points of contact with this Hindu idea; however, the specifics are yet to be worked out by enterprising scientists.

When our understanding of Ayurveda's focus is reoriented thus, we begin to appreciate that the Ayurvedic approach is consistent with its stated goals. When you are given a specific formulation to increase a specific *agni,* the effect of that will not be detected through thermometers. How, then, should we find out if it worked or not? We will have to go back to Ayurvedic source texts and see what the external manifestations of an increase in that particular *agni* would be.

An orthodox Hindu friend of mine once asked, in all seriousness, why the Indian Space Research Organisation (ISRO) couldn't build spacecraft to take us to the other six *lokas* mentioned in the Hindu scriptures. This is an example of the same category error: those *lokas* are not physical spaces to which you can travel in a physical vehicle. They exist on a different plane, much as in the "mind" there may exist the brain, an emotion, a thought, a neuron, and a molecule, all together but on different planes, though in the same place, at the same time.

This is an important point to keep in mind when attempting to correlate descriptions of a process in Ayurveda (say, digestion) and its equivalent in Western medicine. The Ayurvedic description is more likely to be centred on the plane of qualia perception, whereas the Western description will begin from the perspective of cadaveric dissection. They will be correlated, yes, much like the activity of pixels on a screen correlates to the plotline of the movie that is playing on the screen. Making any deeper connections will,

however, require a lot more finesse. Hasty attempts will lead to misunderstandings, resulting in either unwarranted optimism or in unwarranted dismissal of one system in favour of the other.[2]

"Placebo" is not a bad word in qualia-centric science

To understand Ayurveda when coming from a "modern science" context, one of the most important distinctions is in the relationship between medicine and placebo. The "modern" medical system thinks there is a valuable distinction between a useful "real" drug molecule and a "useless" placebo, even though the effect on the patient may be the same. I would argue that this line of thinking is erroneous, because the placebo effect is the most important component of medical systems throughout history. The placebo effect is nothing less than the organism's ability to accelerate its self-healing, based on signals from the environment. The commonest such signal is that a powerful, respected member of your tribe is giving you something to cure your ailment.

Now, the distinguishing feature between a placebo and a "real" drug may be in their field of action. While a placebo is likely going to fail in the case of a highly "concrete" pathology such as an acute haemorrhage, a "real" drug is probably going to be equally problematic in a highly psychological pathology such as, say, non-epileptic psychogenic seizures or the hallucinated voice of your dead grandmother. An antipsychotic drug may stop them, but it is like deploying a bazooka where a dart was needed. This may help us to understand why Ayurveda seems to work better on certain conditions that involve the interplay of complex physiological systems which are slow in progression, as opposed to abrupt, acute emergencies such as a motor-vehicle accident.

Is Ayurveda actually something of a bridge, then, between the "pure placebo" system of homoeopathy and the placebo-minimising system of "modern" medicine? It is an intriguing thought.

Ayurveda, in keeping with the rest of Hindu thought, acknowledges the five classical senses, and seems to focus a lot on taste as a therapeutic approach. Is the Ayurvedic approach providing information to the human system in the form of tastes in order to push buttons and nudge it towards healing?

Karl Friston's free energy principle — built around the concept that the brain is fundamentally interested in minimising predictive error — has been used to understand how the placebo effect may work [23]. The brain maintains a continuously updating model of the body and the world, and it exerts effort to make sure the input it gets matches the model it has. Could one explain seemingly counterintuitive Ayurvedic interventions through this framework? For example, say a disease X has slowed gastric emptying as one of its many effects. The brain is getting signals that the stomach is full. If Ayurveda prescribes induced vomiting for this particular disorder, it may not make any sense from a modern medicine perspective, especially if gastric slowing is only a minor component of the larger disease process. However, it is possible that emptying the stomach through induced emesis will send the brain signals that run counter to what it was getting in the diseased state. Therefore, a placebo-like effect gets activated, and the brain assumes that the disease is getting better, and then actively works to adjust the rest of the physiology to meet its expectations.

A person-ified science

"Modern" science, as derived from the Western tradition, sees as many things as inert objects as possible. It considers as one of its core tasks the disassembling of entities that seem to be unified wholes, or "persons".

While 20th-century Western science tries to explain away a human's agency by digging for mechanisms within neural pathways, the thrust of qualia-centric Hindu systems has been to extend agency to more and more ensembles. For instance, a family of four may hazily be interpreted as a single entity, with agency, instead of a collection of four objects. A clan may be viewed as the manifestation of a single agential entity, which may be referred to as the *kula devata*. The "boundary problem of consciousness" [24] has some connection to this phenomenon, where we attribute agency to ensembles that are approximately at the human level of organisation, but close ourselves off to the possibility of agency existing both at higher as well as lower levels, such as in nations or in cells.

Once we overcome this, we see that agency could exist at other levels of organisation and in varying degrees of subtlety. We may then begin to see the widespread references to spirit possession and exorcism in Ayurvedic texts and other sources as a form of psychiatry or mind–body medicine [25]. They treat the pathology as an entity with its own agency, rather than a mere collection of lab findings and clinical signs. In principle, this is no different from how we treat each other as an entity with agency, instead of a collection of blood, bones, and skin.

These agency-based approaches may be as effective as — if not more effective than — many modern interventions in treating, say, conversion disorders, stuttering, and psychogenic non-epileptic seizures. Modern medicine treats these as somehow "less real" diseases because they are not "organic". But they produce unpleasant life experiences for the sufferer just like any "real" disease does, so arguing that they are not real diseases is no different than sticking your head in the sand and saying the sky does not exist. It may not simply be these conversion-like disorders are amenable to this route of treatment, however. Through placebo-like mechanisms, such interventions may even be capable of harnessing powerful self-healing pathways in complex organic diseases that involve close interplay with the nervous system, such as in autoimmune disorders.

Distinguishing truth and falsehood

In my defence of the fundamental metaphysics of Ayurveda (and of Hindu knowledge systems), I do not aim to excuse the abuses of science and sense that happen in its name. In my opinion, the complexity and subtlety of the Ayurvedic method leaves it open to infiltration by those with limited understanding, as well as by people looking to make some quick money. They resist any attempts to systematise the field, such as research on outcomes.

When challenged, they hide behind the fig leaf provided by Ayurveda's religious association. Indeed, they turn around and gaslight the questioner, asking how they could be so impertinent as to challenge their grand lineage of gurus and ancient texts. Such resistance leaves those who are sympathetic to Ayurveda unable to tell the good from the bad. A patient who isn't benefiting from an Ayurvedic therapy may be unwilling to voice it, because the *vaidya* has assumed the role of religious authority. In such a scenario, the patient may be led to believe that if the prescribed medicine isn't working, then the error is not in the medicine, but within themselves! The end result is that many bad actors hide behind the virtue of good ones, and, if left unchecked, will land up strangling the field as a whole.

Ayurveda deserves a rigorous method to answer questions such as: Which of two companies' formulations of a specific Ayurvedic recipe is superior for a particular condition? If I need to get rid of a kidney stone — which is easily seen by ultrasonography — which Ayurvedic treatment protocol offers the highest likelihood of removing it? End points need to be fixed, and verifiable results must be expected. Some feelings may be hurt, but we need not think of it as rejecting failures; rather, as *identifying winners*. Some specific therapy being proved ineffective for some specific disease should not be taken as a great setback for Ayurveda. It is just as possible that the reason for the failure was our modern inability to fully understand the terms used in the source texts, or our inability to devise tools that clearly assess whatever outcome variables the therapy was to affect.

As India's economy grows, Hindu knowledge systems and Ayurveda will gain greater financial power and greater global acceptance. There will be a push to gain a seat for them at the high table, as being equal to but different from "modern" science. However, Hindu knowledge systems and Ayurveda deserve better. They are not meant to be "alternative" or "complementary" "ways of knowing" that "wise" healers use. Rather, they should be seen as internally coherent, logically structured systems of knowledge that are based on a metaphysics which is radically different from modern science and medicine. One doesn't need to turn off one's rational mind when using these systems of knowledge, one just needs to adjust one's priors and assumptions.

All knowledge must fundamentally be unified at some level. To ensure Ayurveda and Hindu knowledge systems do not get relegated to a museum, or to parties as entertainment for the rich, we must insist on rigorous enforcement of quality at all levels — in theory, practice, and in outcome assessment.

Note: *[1]Here I must acknowledge that Samkhya is only one of many schools of Indian philosophy. Much of Ayurveda is based on principles developed in other systems, such as the Vaisheshika and Nyaya [12–14]. However, since my focus in this manuscript is primarily on the consciousness–qualia aspect that underlies Ayurveda and allied Hindu knowledge systems — and less about its mechanisms of diagnostics, research, and therapeutics — I feel it is reasonable to restrict our discussion to the Samkhyan world model.*

[2]My personal beliefs are closer to the Hindu monist–idealist world view than what I have expressed in this paper. For instance, I have reason to suspect that the Maha Bhuta are not 'just' within our brain's construction of illusory reality, but that they simultaneously do represent a 'real' external reality as well. However, I have kept my explanation of Hindu knowledge systems in the preceding section within the confines of the dominant "physicalist" paradigm of modern science in order to find common ground with a larger readership.

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