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COMMENTARY

Revisiting the *tridosha* paradigm of Ayurveda

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Abstract

The tridosha paradigm is foundational to Ayurveda. Ayurveda uses it to explain life processes, classify illness states, and facilitate therapeutic choices. The paradigm has an aspect that is heuristic and practical; it has another aspect that is purely speculative and conjectural. The paper sheds light on the distinctness of these two aspects by tracing the plausible steps in the conceptual evolution of the tridosha scheme. It also proposes a reimagining of the paradigm by jettisoning the conjectures and retaining the heuristics. Sans this reimagining, the paradigm would be pseudoscientific and its use in medical decision making, unsafe and unethical.

Keywords: *Ayurveda, tridosha, vata, pitta, kapha*

Outline of the classical *tridosha* paradigm

Vata, pitta, and *kapha,* literally meaning wind, bile, and phlegm, are the three *doshas* (illness-causing faults) that pervade all through the body. Their pervasiveness notwithstanding, each *dosha* has a specific seat where its activity is especially pronounced. The pelvic, the umbilical, and the thoracic regions are the special seats of *vata, pitta,* and *kapha,* respectively.

Each *dosha* is characterised by about half-a-dozen qualities of which one or two are defining. Dryness (*rooksha*) is the defining quality of *vata* [1]; heat (*ushna*) is the defining quality of *pitta;* wetness/oleaginousness (*snigdha*) and coolness (*sheeta*) define *kapha*.

Fluctuations in the manifestations of these qualities hold the key to inferring the fluctuations of *doshas* inside the body. For instance, drying up manifests as emaciation and indicates a pathological increase of *vata;* excessive body-heat manifests as a burning sensation and indicates a pathology of *pitta;* excess oleaginousness makes the body plump and indicates the pathological *kapha*. The association of dryness with emaciation, heat with burning sensation, and oleaginousness with plumpness is not haphazard; such associations are products of commonsense analogies.

Just as the *doshas* are characterised in terms of distinct qualities, foods, drugs, mental states, times and spaces are all characterised in terms of those very qualities. A few examples would illustrate the point. Coconut water is deemed cooling whereas chillies are deemed hot. To be angry is to be hot-tempered and to be calm is to be cool-headed. The mountainous Himalayas are wet and moist whereas the deserts are hot and dry.

Based on such characterisations of both the environmental factors (foods, drugs, times, spaces etc) and the bodily factors (*vata, pitta,* and *kapha*) in terms of a few basic qualities, a simple intuitive scheme called the *samanya-vishesha siddhanta* is used to strategise the manipulation of body functions:

Sarvesham sarvada vruddhih tulya-dravya-guna-kriyaih

Bhavavairbhavati bhaavanaam vipareetaih viparyayah

"Substances, qualities, and actions are enhanced by similar substances, qualities, and actions; they are diminished by dissimilar ones." [2:1:14]

Although eulogised as a doctrine (*siddhanta*), this statement is only a truism. The truism helps in a guided manipulation of the bodily *doshas* to accomplish the following ends: "Depleted *doshas* need to be increased; mildly increased *doshas* need to be pacified; excessively increased *doshas* are to be eliminated. The elimination is to be accomplished principally by emesis and purgation. A balanced state of *doshas* is to be sustained." The quotation, excerpted from *Sushruta Samhita,* articulates the central doctrine of Ayurvedic therapeutics [3:33:3].

Here is an example to illustrate how ingeniously Ayurveda applies this commonsense scheme to clinical situations. Weight loss and emaciation are problems that are, in the convention outlined above, characterised by the body drying up. Dryness (*rooksha-guna*) being the defining attribute of *vata,* these problems are diagnosed as *vata*-disorders. The cause of dryness in the particular case is first ascertained and if possible, eliminated. Diet, drugs, and lifestyle that can counter dryness are thereafter employed in treating the case. Ghee-rich foods; drugs like *Ashvagandha;* and, lifestyle measures like restful sleep, body massage with oils etc — all of which are characterised by oleaginousness (*snigdha-guna*), the opposite of dryness (*rooksha-guna*) — are reasoned to be appropriate in treating weight loss and emaciation.

The lure of the paradigm is that it facilitates a synthetic interpretation of diverse components related to diagnosis and treatment. Such diverse aspects as the body type of the patient, their disease, their mental states, their habitat, the drugs and therapies plausibly appropriate for them are all characterised and synthetically interpreted in terms of a few basic qualities (hot/cold, wet/dry). Such a synthetic interpretation (*yukti*) is highly prized in Ayurveda and it is this that confers upon Ayurveda its aspirational holism.

The riddles in the paradigm

The riddles in the paradigm outlined above are obvious: What is the basis to suppose that wind, bile, and phlegm pervade all through the body? What is the connect between bodily wind (*vata*) and weight loss, a symptom attributed to it? What connects the bile (*pitta*) with burning sensation, a symptom said to result from biliary excess? What has phlegm (*kapha*) got to do with plumpness which is said to result from an increase of it?

Even if, for the sake of argument, one were to accept the paradigm, more serious doubts emerge about its explanatory and predictive powers. Consider the clinical situation exampled above. Apart from under-nutrition, weight loss can have many counter-intuitive causes too. Weight loss in diabetes mellitus, for instance, can result in spite of, or even due to, nutritious food. How can the *tridosha* paradigm account for weight loss that results even from an intake of oleaginous foods?

Thus, broadly speaking, the paradigm is faced with two major riddles. One relates to the biological impossibility of wind, bile, and phlegm underlying the myriad symptoms and diseases attributed to them. The other relates to the explanatory and predictive powers of the *tridosha* model. Both the questions are valid, and several attempts have been made in the past to solve them.

Earlier attempts to solve the riddles

For a mind trained in the current sciences, the answers to both the riddles are perhaps straightforward. The *tridosha* paradigm is simply an outdated model that is based on primitive biological conjectures. It has no relevance either in biology or in medical practice. Over a hundred years ago, Sutherland wrote scathingly in a paper published in *The Indian Medical Gazette:* "It is idle to assert — as those who advocate Ayurveda assert — that the sages used the words *vayu*, *pitta*, and *kapha* in a sense different from that attaching to wind, bile, and phlegm, which these word signify today, because by these words they signified nervous force, metabolism, phagocytosis, and what not. Special pleading of this kind may do very well in the law courts, but it is entirely out of place in matters medical." [4]

Expectedly, Ayurveda scholars and physicians resented this view. Pandit Shiv Sharma, in a scholarly defence published a few years after Sutherland's paper appeared, drew attention to an important fact. The texts of *Vriksha-Ayurveda* that deal with arboriculture also use the *tridosha* paradigm to explain, diagnose, and treat plant diseases. "Surely the ancients did not discern any bile or phlegm in the trees!" Sharma sarcastically exclaimed. "They evidently believed the three *doshas* to be some form of energies or principles of the living organism." [5]

Shiv Sharma's point warrants a careful study. *Vriksha-Ayurveda* must have been a very ancient discipline, the original works of which are now unavailable. Both *Arthashastra* (300 BCE) and *Brihat-samhita* (6th century CE) have sections devoted exclusively to it. Whether the earlier treatises of *Vriksha-Ayurveda* discussed plant diseases in terms of *vata, pitta,* and *kapha* remains a moot point. What is clear is that the later works on the subject did expressly embrace the *tridosha* paradigm to classify plant diseases. *Shargadhara-Paddhati* (13th century CE), in its section titled *Upavana-Vinoda,* refers to the classification of plant diseases in terms of *tridosha*. *Naraanaam iva vrikshaanaam vaata-pitta-kaphaat gadaah* — "Trees, like men, are afflicted by diseases due to *vata, pitta,* and *kapha*." Furthermore, the text elucidates the distinct features of trees belonging to *vata-prakriti, pitta-prakriti,* and *kapha-prakriti* [6]. As Sharma pointed out, such concepts attest to the fact that the words *vata, pitta,* and *kapha* had acquired connotations well beyond their straightforward denotations as wind, bile, and phlegm.

What then were the acquired connotations of *vata, pitta,* and *kapha?* Sharma was unsure of this. While declaring that the *tridosha* concept was complete and scientific, he wrote, "Whether the *tridoshas* are energies, forces, principles, humors, or hormones (in their different forms and manifestations), their physiological and pathological significance remains the same. The facts as presented by the Ayurvedic texts clearly denote that the ancients never considered *doshas* as effete materials like tangible forms of *kapha* and *pitta,* or the gases produced in the stomach in the process of digestion." [5]

This assertion, besides being open-ended, is weak on facts. There are many references in the Ayurveda classics about the material nature of *doshas.* In a later work, Sharma himself revised his earlier open-ended assertion on the nature of *doshas.* Quoting G Srinivasa Murthy, he emphasised that *"vata, pitta,* and *kapha* are matter in every sense of the term — not mere abstractions." Sharma also proposed rather confusingly that "the *doshas* are the ultimate irreducible systems of every type of living protoplasm" [7].

Pandit Shiv Sharma's views are important not merely because of the interesting insights and confusions they embody. They are also important because he was the most influential thought leader in the field of Ayurveda during the twentieth century. He was the first president of the Central Council of Indian Medicine, the statutory body under the Government of India, that was tasked with designing and regulating Ayurvedic education. He held that post for ten years between 1971 and 1980.

In addition to Shiv Sharma, many other Ayurveda scholars attempted to interpret the *tridosha* paradigm with a view to make it intelligible and convincing to the modern mind. Three of those attempts are particularly noteworthy and are discussed in the Supplementary file 1 (available online only). As may be gauged from the account therein, the attempts have sometimes been insightful, sometimes ridiculous, but never fully satisfactory. A satisfactory solution can perhaps be reached if the riddle is approached by first understanding the conceptual precursors of the *tridosha* paradigm.

The conceptual precursors of the *tridosha* paradigm

The human mind comes up with models and theories with a view to systematise the understandings it has gleaned from myriad life experiences. Systematisation is needed to ensure that good experiences become reproducible and the bad ones avoidable. In other words, systematisation facilitates intelligibility and predictability of phenomena, which in turn help humans control nature and thereby achieve better living. Sans systematisation, the cognitive load of haphazard bits of information would be simply unmanageable.

Across many cultures, the first millennium BCE saw an accelerated pace in the processing, systematisation, and universalisation of human knowledge. The German philosopher Karl Jaspers called it the Axial Age because during this period there was a shift — or a turn, as if on an axis — away from more petty concerns and toward transcendence [8]. In India, this is the millennium during which Panini — the grammarian, *Sushruta* and *Charaka* — the medical pioneers, Gautama Buddha — the internal rebel, Kapila, Kanada and Gautama — the philosophers, and *Ramayana* and *Mahabharata* — the national epics, appeared. Ayurveda's codification and conceptual strides can be understood only in the larger context of the intellectual and creative *mise-en-scene* of India's Axial Age.

The stones that were used to build the *tridosha* edifice came majorly from three quarries:

i. Observations, experiments, and speculations on health-promotion and illness-management

ii. Vedic social representations

iii. The *Sankhya* and the *Vaisheshika* conventions

Presumably, a large mass of observations and beliefs relating to health promotion and illness management, gathered by countless lay people and ascetics, had become available by 800 BCE. The *Atharva Veda,* with its earthly orientation, had laxly documented many of these observations and beliefs. It had even ventured to speculate on life processes. The *Prashna* Upanishath of the *Atharva Veda* has an account of the five types of *vayu* and their functions [9]. That account is nearly the same as the description of *vata dosha* found in Ayurveda. The conception of *trigunas,* upon which the *tridosha* paradigm is modelled, also has its roots in the *Atharva Veda* [10]. It is no wonder that Ayurveda expressly acknowledges its indebtedness to *Atharva Veda* by designating itself as its *Upaveda*.

The antecedents of the *tridosha* concept are to be found in Vedic social representations. According to Moscovici (1981), social representations are "a set of concepts, statements, and explanations originating in daily life in the course of inter-individual communications...They might even be said to be the contemporary version of common sense." Social representations originate, float around and evolve in the interactions of common people [11]. They provide an evolving framework for making sense of the world, deriving from observations of natural phenomena, orthodox schools of philosophy, rebel movements, and intergroup relations. In short, social representations do not issue forth from the head of any one man or the pulpit of any one school. They are collective intuitions and emerge from the common pool of human knowledge.

Two major social representations of the Vedic age have profoundly influenced the Ayurvedic worldview on health and illness. One is the idea of *Agni* (fire, the principle of heat and energy expense) and *Soma* (moon, the principle of coolness and energy conservation) as the common regulators of both the microcosm and the macrocosm. The other is the idea that the human body is basically a nutritive process and that its illnesses are aberrations in this process. These two Vedic social representations contributed enormously to the substance of the *tridosha* model.

Agni and *Soma* as the chief regulators of all creation is an idea that occurs as early as the *Rig Veda*. Together with Indra, Agni and Soma are the gods most invoked there. But the most direct record of the application of the hot/cold idea in therapeutics is to be found in *Yajur-Veda*. *"Agnih himasya bheshajam"* — "Heat is the medicine against cold."[12] This line, regarded as an *anuvaada,* is supposed to only echo what is already known [10]. The *anuvaada* status of this Vedic line again attests to the fact that the idea is actually a social representation.

Sushruta Samhita regards the world itself as being constituted essentially of *Agni* and *Soma* [13:40:4]. *Charaka Samhita* clearly suggests that *Agni* and *Soma* are the conceptual precursors of *pitta* and *kapha doshas*, respectively: *"Agni* functions in the body as *pitta* and *Soma* functions as *kapha*." [14:12:12] In Ayurvedic discourses on health, illness states, dietetics, and pharmacology, the material qualities of hot (*ushna*) and cold (*sheeta*) are used as proxies for *Agni* and *Soma*, respectively. Hot and cold are, in fact, regarded as the most important of material-qualities [2:9:17].

Dominik Wujastyk has conjectured that there must have been a two-humour (*Agni/Soma*) concept that predates the Ayurvedic three-humour paradigm. *Vata* must have been a later entrant into the *Agni/Soma* scheme [15]. In the light of the *Yajur-Vedic* statement cited above, this conjecture does not seem improbable.

Viewing the human body basically as a nutritive process is also a very ancient Vedic idea. *"Annaat purushah"* — "The body issues forth from food", says a famous Vedic line [16]. While optimal nutrition is the cause of health, under-nutrition and over-nutrition are the causes of illnesses. Ayurvedic texts theorise that treatments are therefore of only two types: nourishing treatments (*santarpana*) and famishing treatments (*apatarpana*) [2:14:1]. All the various therapies fall under one of these two categories only. Ayurveda ingeniously devised a convention to designate the nourished and famished states as being respectively due to

oleaginousness (*snigdha*) and dryness (*rooksha*). Devising material-properties to designate biological states is one of the striking intellectual achievements of Charaka. The inspiration for this conceptual innovation must have come from the *Vaisheshika* system.

An interesting feature of the Vedic social representations discussed above is that they are both popular even today. Their popularity seems to be transcultural. Classifying foods, mental states, and geographical regions as hot/cold is a common part of lay conversations. English expressions such as "hot-tempered" and "cool-headed" attest to the fact that the lay mind, across cultures and ages, associates heat with anger and coolness with tranquility. An angry man under the cool shade of a tree would be less fierce than under the hot sun. Coolness must therefore assuage anger. Such commonsense reasoning along with the social representations derived therefrom lie at the heart of the *tridosha* paradigm.

Equally, nutrition as the principal determinant of health and ill-health is also a deeply entrenched social representation. Proverbs such as, "You are what you eat," "The longer the belt, the shorter the life," show the transcultural character of these lay ideas on health and illness. As recently as the twentieth century, the medical intellectual Thomas McKeown put forward the idea that there are two broad categories of preventable illnesses: diseases of affluence and diseases of poverty. Needless to add, McKeown's categorisation is reminiscent of the aforementioned Ayurvedic categories of diseases [17].

Observations on health and illness, the Vedic social representations that reinforced them, and Charaka's ingenious use of material qualities to designate biological states had laid the foundations required for a logical scheme that would help systematise medical experience. An idea of the principal material qualities (hot/cold, dry/wet) that required to be employed in medical discourse had become available. The task was to wed these material qualities with biological entities. Hot/cold and dry/wet needed their bodily representatives. Incidentally, the same two pairs had the status of primary qualities even in ancient Greek medicine [18].

Given the penchant for seeing the body as a nutritive process, digestion was quite naturally the life process that was of foremost interest to ancient doctors. It was also the life process that was somewhat fathomable to common sense. Also, among the commonest disorders that afflict people are those that relate to the digestive system. In fact, Ayurveda calls its discipline of general medicine as *Kaaya-chikitsa* wherein *kaaya* means the gastric *agni* [14:30:38]. The prominent manifestations of digestive disorders like flatulence, burning pain, and loss of appetite must have given further hints about the bodily candidates that could be designated as illness-causing faults (*doshas*). These were presumed to be three — wind in the lower gut, bile in the middle gut, and phlegm in the upper gut.

The perennial movement of wind that takes place through the nose in the form of inhalation and exhalation should have easily made the head region the principal seat of *vata*. Yet, the principal seat of *vata* is said to be the lower gut. This fact also indicates that the designation of wind, bile, and phlegm as *doshas* emerged primarily from a reflection on digestive activity.

The *tridosha* concept was finally formulated by connecting the material qualities of hot/cold, wet/dry etc with their bodily representatives, namely wind, bile, and phlegm. *Vata* came to represent dryness, *pitta* came to represent hotness, and *kapha* came to represent wetness and coolness. The *Sankhya* convention of reifying qualities and positing them as real substances came in handy to fortify such representations. The details of this *Sankhya* convention are important to understand not only the conceptual evolution of the *tridosha* paradigm; they are needed also to assess its scientific value.

Reification as a convention in the *Sankhya system* and its influence on ayurvedic theorists

Reification, also called hypostatisation, refers to the representation of something abstract as something concrete [19]. In the general sense, it is the conversion of a property of something into a self-subsistent object or substance [20]. This is a philosophical convention prominently legitimised by the *Sankhya* system [21]. The *Sankhya* refuses to recognise the distinction between substance and quality [10]. The word *guna* literally denotes quality. But the three gunas (*satva, rajas*, and *tamas*) that constitute *Prakriti* are not its qualities; they are simply its constituents. What then is the nature of these constituents? The *Sankhya* only says that they are not directly perceived; they are to be inferred from their effects [22]. *Satva* is light, illuminating and pleasing; *rajas* is restless and exciting; *tamas* is heavy and stupefying. The origin of this conception is undoubtedly psychological. The varying mental states of human beings are reified and presented as the constituents of nature [21].

The *Sankhya* philosophical convention of reifying qualities was adopted by the Ayurvedic theorists. The Ayurveda classics invariably introduce *doshas* in terms of their qualities. Arunadatta, the commentator on *Ashtanga Hridaya,* explains that it is a figurative convention to define a substance (*guni*) in terms of its qualities (*guna*) [2:1:12]. For practical purposes, there is no distinction between a substance and its qualities. Therefore, it is apt to define *doshas* in terms of their principal qualities.

Such a convention of defining things gave a radically different connotation to the words *vata, pitta,* and *kapha.* In the new parlance, *vata, pitta,* and *kapha* simply became their

respective qualities reified. *Vata* was no longer just the bodily wind; it became dryness reified. *Pitta* was not just the bile; it became hotness reified. *Kapha* was not just phlegm (or "phlegm-like" lubricants such as the synovial fluid); it became wetness and coolness reified.

While the words *vata, pitta,* and *kapha* still denoted wind, bile, and phlegm, the Ayurveda theorists dethroned these denotations as the technical meanings of those words. This is a classic instance of denotations (explicit meanings) subsiding to make way for connotations (implicit meanings). It is because of this that the Ayurveda classics introduce *vata, pitta,* and *kapha* in terms of their qualities and almost never as wind, bile, and phlegm.

Ayurveda is explicit in its acknowledgement of the *Sankhya* system. *Sushruta Samhita* posits *trigunas* — and not the *pancha mahabhutas* — as the philosophical analogues of *tridoshas* [13:24:8]. *Vagbhata* also reinforces the same view [2:12:33]. Exclusive chapters are devoted in both *Charaka Samhita* and *Sushruta Samhita* to discuss *Sankhya* philosophy. Vachaspati Mishra, in his commentary on the thirteenth verse of the *Sankhya-Karika,* also opines that the *triguna* and the *tridosha* concepts are obviously analogous [10].

Concepts do not develop in an orderly and robotic way. Spontaneous insights and error-corrections lead to several back-and-forth movements before a concept is fine-tuned. Several such back-and-forth movements must have occurred during the formulation of the *tridosha* paradigm as well. Real world conceptualisation is seldom as neat and orderly as its retrospective reconstruction.

The reification fallacy and its propensity to host conjectures

Reification is actually a logical fallacy. It confers an artificial reality upon abstractions that are utterly unreal. While the use of reification in poetry is justifiable, its use in scientific explanations is inappropriate [19]. When the figurative is mistaken for the factual, a messy conceptualisation results.

The *Sankhya* system came under criticism precisely because it reified the *gunas* (*Satva, Rajas,* and *Tamas*) and called the reified conglomerate *Prakriti.* In other words, the *Prakriti* of the *Sankhya* system is a speculative construct that has only a vague basis in fact [21]. Shankara criticised it for being *kalpita,* purely imaginary [23].

In this sense, the reified material-qualities that Ayurveda calls *doshas* are also imaginary. If reified qualities are mistaken for real objects, numerous fantastical conjectures can spring up. In fact, the *tridosha* concept is marred by several such fantastical conjectures. One example would aptly illustrate this problem.

Numerous passages in Ayurvedic texts explain the movement of *doshas* inside the body. In a particularly memorable instance, the texts say that the preparatory steps of *panchakarma*, namely lubricant therapy (*snehana*) and fomentation (*svedana*) loosen and mobilise the *doshas* from the body channels, clear the openings of the channels into the alimentary canal, and deliver them into its lumen. The morbid *doshas* are then finally eliminated from the alimentary canal by emesis and purgation.

But, how did ancient physicians in those far-off ages figure out what was happening in the interiors of the human body in such detail? The fact is that they merely speculated and conjectured. Valiathan writes, "The channels and the accumulated *doshas* blocking them were not visible to the physician except in his 'mind's eye'; and the idea of loosening the *dosha* plugs by the ingestion of a fat-based preparation and the elimination of the accumulated *doshas* which would flow into the alimentary canal by emesis or purgation was untested. In other words, the anxious physician was playing with mental images on the patients' management when he had few means to know directly what had gone wrong in the patient's body and even fewer means to set things right." [24]

On the one hand, reification had the positive effect of giving the words *vata, pitta,* and *kapha* connotations that were more logically tenable than their denotations as wind, bile, and phlegm. On the other, reification had the negative effect of fossilising mental images and conjectures as settled facts. Genuine medical observations of ancient doctors thus got unwittingly interspersed with a formidable mass of physiological and pathological conjectures. The momentous task, if Ayurveda is to be revitalised, is to sift genuine medical observations from such conjectures.

The *tridosha* model as an explainer and predictor of phenomena

From what has been detailed hitherto, it must be clear that the *tridosha* model has two distinct aspects. It has aspects that are commonsensical and seem tenable; it has other aspects that are outright speculative and conjectural. Gananath Sen's allusion to the practical and speculative sides of the model may be recollected here (Supplementary file 1, available online only). A fair assessment of the model first requires a cogent articulation of the commonsensical and seemingly tenable aspects.

In their practical avatar, *vata, pitta,* and *kapha* are simply proxies for the material qualities of dryness, hotness, and wetness/oleaginousness. For practical purposes, *vata*-increase in the body means an increase in dryness — of the skin, of the eyes, of the stools, or of the body itself. Similarly, *pitta* increase would mean an increase of body heat — as fever, as the calor of inflammation, as hot breath, or as hot stools. *Kapha* increase would likewise mean an increase of oleaginousness in the body — oily skin, lethargy, sluggishness and plumpness. It must be reiterated here that although *vata, pitta,* and *kapha* are characterised by their principal qualities of dryness, heat and oleaginousness, each

dosha is associated with about half-a-dozen other qualities too. An increase of the *dosha* is to be inferred from an increased manifestation of those qualities also.

Can this model explain all pathologies cogently? Is it trustworthy as a predictor of therapeutic choices? Ayurveda likes to say yes; but it is really unsure. There is an interesting conversation recorded in *Charaka Samhita* in which precisely these questions are taken up [25:3:39]. The conversation takes place between Atreya, the teacher and Agnivesha, his pupil. Here is a paraphrase of that passage (emphasis mine):

> *What then is the principle of correct treatment? Simply stated, this is to administer measures that are opposed to the properties of the cause and manifestations of diseases. But one must apply reason in every situation. For example, fever is hot, but hot water is often given to the patient, which* ***appears to contravene the basic principle.*** *However, reason tells us that fever originates from the stomach, and the disorders which have their source in the stomach respond to measures that promote digestion. In the present instance, hot water promotes digestion and hence its relevance. However, in fevers associated with fainting and delirium, hot water may be inappropriate.* [26]

A study of the passage shows the difficulties faced by ayurvedic theorists in balancing fidelity to observed facts with a desire to maintain intact a simplistic model. In the *tridosha* parlance, fever is a disorder of heat. Cooling measures like cold water must therefore be therapeutic in fevers. But this commonsensical prediction is contrary to an observed fact. Warm water, in fact, feels good and beneficial in common fevers. The model thus makes a therapeutic prediction that is contrary to an observed fact. Atreya carefully maintains his fidelity to the observed fact and recommends hot water, but he would not accept that the model is falsified. Instead, in an instance of glaring scientific naiveté, he defends the model by introducing a conjecture that fever originates in the stomach. He builds on it and unwittingly whitewashes the model's failure. A simplistic model was stretched to explain everything and as a consequence, it got enmeshed in a complex web of conjectures [27].

Honest and perceptive practitioners of Ayurveda come across numerous instances where their *tridosha* model fails to explain observations cogently. The *tridosha* model predicts that body temperature must peak diurnally during midday — the time of *pitta,* but it actually peaks in the early evening. Itching is said to be a symptom that results chiefly from increased *kapha* and *pitta,* but the commonest cause of itching is dryness of the skin which is due to *vata*. Menorrhagia is supposed to be a result of excess body heat, but hypomenorrhea is the menstrual manifestation of hyperthyroidism (a disorder of heat).

Many more instances may be given of the paradigm misfiring. But the Ayurvedic orthodoxy dismisses them either by summoning newer and newer conventionalist stratagems or by gaslighting the falsifier for his "shallow understanding" of the paradigm itself. A conventionalist stratagem is a technique used by a theorist to evade the consequences of a falsifying observation [28].

A cursory review of the "Ayurvedic pathogenesis" of hypertension published in peer-reviewed journals is enough to show that the *tridosha* paradigm has become something of a sad joke. One paper, published in 2017, proposes that "hypertension is to be understood as the *Prasara-Avastha* which means spread of vitiated *Doshas* from their specific sites, specifically of *Vyana Vata, Prana Vata, Sadhaka Pitta,* and *Avalambaka Kapha* along with *Rakta* in their disturbed states. The *Avarana* (occlusion of normal functioning) of *Vata Dosha* by *Pitta* and *Kapha* can be seen in the *Rasa-Rakta Dhathus,* which in turn hampers the functioning of the respective *Srotas* (microchannels) of circulation." [29] Without caring to ascertain if *vyana vata, sadhaka pitta,* and *avalambaka kapha* have any authenticity as biological entities, the paper waxes eloquent on their movements inside the body. What Valiathan [24] refers to as "mental images" in his remarks quoted earlier are here grandly mistaken for biological realities. Such conjectural images are then used to even propose a line of treatment!

The habit is not peculiar to the paper cited above; almost all the papers that venture to decipher the "Ayurvedic pathogenesis" of disorders that are not discussed in the classics end up mistaking conjectures for biological realities. They proceed from the unsubstantiated assumption that the *tridosha* paradigm has a robust predictive power and can therefore be extrapolated to interpret newer pathologies. Ayurvedic practice is also heavily permeated by this dangerous assumption.

Reimagining the *tridosha* model as a heuristic

That the *tridosha* model does not have a robust explanatory and predictive power is clear. Should the model therefore be jettisoned?

Perhaps not. While the model does not qualify as a robust theory, it can be prudently reimagined as a heuristic. A heuristic is "a rough-and-ready procedure or rule of thumb for making a decision, forming a judgement, or solving a problem without the application of an algorithm or an exhaustive comparison of all available options, and hence without any guarantee of obtaining a correct or optimal result." [30]

The *tridosha* model of diagnosis is actually a representativeness heuristic that the ancients devised. Essentially, the model requires comparing a clinical situation with its representative prototype described in the texts. The prototypes, of course, belong to the three broad categories of *vata, pitta,* and *kapha.* After such a comparison, the model is used to synthetically interpret (*yukti*) all the relevant variables in the clinical context with a view to arrive at a holistic treatment strategy.

In general, heuristics are quite useful, but sometimes they lead to severe and systematic errors [31]. The usefulness of the *tridosha* model as a rough-and-ready reinforcer of common-sense has been illustrated in many parts of the present paper. That is its heuristic side. Equally, the severe errors that can result from mistaking it for a foolproof biological law have also been illustrated — especially under the previous sub-head. Basically, heuristics cannot account for observations that are counter-intuitive; science developed precisely to check the limitations of commonsense reasoning.

Between retaining the ancient *tridosha* model *sensu stricto* and binning it *in toto,* the via media of treating it as a heuristic model appears prudent. Heuristic models are appropriate to use in safe and low-risk situations that do not require precision in decision making. Where such precision is needed, their use would be imprudent.

Safety-netting of clinical situations is generally not possible without a good grasp of the basic medical sciences. Therefore, while the *tridosha* heuristic comes in handy in many primary care situations, the wise ayurvedic physician will always brace it up with an analysis of the clinical situation in terms of current patho-physiology [32]. Needless to add, in situations where *tridosha*-based judgments contradict pathophysiology-based judgements, the latter must override the former. Furthermore, given that the predictive precision of heuristics is low, it is not prudent to extrapolate them to unfamiliar clinical situations. Heuristics might only be extrapolated with a view to glean testable hypotheses.

Retaining the *tridosha* model as a heuristic has a practical purpose. While ensuring the cultural continuity of the Ayurvedic idiom, it can actualise — to a fair degree — Ayurveda's aspirational holism by fortifying *tridosha*-based clinical judgments with current scientific knowledge. But this requires reimagining the *tridosha* paradigm along the lines explained in this paper. Sans this reimagining, the paradigm would be pseudoscientific and its use in medical decision making, unsafe and unethical.

There appears to be some scope for unravelling the biological basis of heuristical observations. The research on the genetic basis of ayurvedic body types is a case in point [33]. Reimagining the *tridosha* paradigm as a heuristic will facilitate such studies by sifting researchable observations from fantastical speculations.

The first chapter of Vagbhata's *Ashtanga Hridaya* is believed to present the whole of Ayurveda in a nutshell. Incidentally, this chapter contains only the heuristic aspects of the *tridosha* paradigm. We must take the cue from there.

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References

1. Sharma PV. *Caraka Samhita* Critical Notes. Vol 3, p.46. Varanasi: Chaukhambha Orientalia; 1999
2. Paradakara HSS, ed. Sutrasthanam In: *Ashtangahrdaya* with the commentaries of Arunadatta and Hemadri. Varanasi: Chaukhambha Surbharati Prakashan; 2023
3. Trikamji Y, ed. *Chikitsasthanam*. In: *Sushruta Samhita*. Varanasi: Chaukhambha Surbharati Prakashan; 2003
4. Sutherland WD. Ayurveda of To-Day. *Ind Med Gaz.* 1919 Mar [Cited 2024 Dec 12];54(3):81-90.: Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5140262/?page=1
5. Sharma S. The tridosha theory. In: *The system of Ayurveda*. Bombay: Khemraj Shrikrishnadas; 1929
6. Majumdar GP, ed. Upavana Vinoda. p. 58 Calcutta: The Indian Research Institute; 1935
7. Sharma S. *Ayurvedic Medicine - Past and Present*. p. 162 Varanasi: Chaukhambha Krishnadas Academy; 2005
8. Stefan M. The Axial Age: 5 fast facts. In: *Encyclopaedia Britannica*. [Cited 2024 Dec 12]. Available from: https://www.britannica.com/list/the-axial-age-5-fast-facts
9. Prashna Upanishath Question 3, mantras 5,6,7. *Scriptures: Red Zambala*. [Cited 2024 Dec 12]. Available from: https://scriptures.redzambala.com/upanishad/prashna-upanishad-english-sanskrit.html#305
10. Hiriyanna M. Age of the systems. In: *Outlines of Indian Philosophy*. Delhi: Motilal Banarsidas; 2009
11. Gross R. Psychology - *The science of mind and behaviour*. London: Hodder Education; 2020
12. Yajurveda. Chapter 23, mantra 46
13. Ghanekar BG. Sutrasthanam. In: *Sushruta Samhita*. New Delhi: Meharchand Lachmandas Publications; 1998.
14. Trikamji Y, ed. Sutrasthanam. In: *CarakaSamhita*. Varanasi: Chaukhambha Surbharati Prakashan
15. Wujastyk D. Agni and Soma: A universal classification. *Stud Asiat.* 2004;4-5:347-369. https://doi.org/10.1901/jaba.2004.4-5-347
16. Taittiriya Upanishath. Brahmananda Valli. 1-1.
17. Le Fanu J. *The rise and fall of modern medicine*. p. 355 London: Abacus; 2011
18. Lloyd GER. Introduction. In: *Hippocratic writings*. London: Penguin classics
19. Dowden B. Fallacies. In: *Internet Encyclopaedia of Philosophy*. Available from: https://iep.utm.edu/fallacy/
20. Frolov IT. *Dictionary of Philosophy*. Moscow: Progress Publishers. 1984
21. Mohanty JN. The Sankhya Karikas. In: *Encyclopaedia Britannica*. Available from: https://www.britannica.com/topic/Indian-philosophy/The-Samkhya-karikas
22. Radhakrishnan S. The Sankhya System. In: *Indian Philosophy,* Volume 2. London: George Allen and Unwin Limited; 1930
23. Shankara. Brahmasutra Bhashyam. 1-1-5
24. Valiathan MS. Caraka's approach to knowledge. *Indian J Hist Sci.* 2016[Cited 2024 Dec 12]; 51(1): 33-39. Available from: https://cahc.jainuniversity.ac.in/assets/ijhs/Vol51_2016_1_Art06.pdf
25. Trikamji Y, ed. Vimanasthanam. In: *CarakaSamhita*. Varanasi: Chaukhambha Surbharati Prakashan
26. Valiathan MS. *T*he Legacy of Caraka. Hyderabad: Orient Longman; 2004
27. Krishna GL. The ayurvedic dosha theory: A deconstruction. *Confluence*. 2019 Jul 11 [Cited 2024 Dec 12]. Available from: https://confluence.ias.ac.in/the-ayurvedic-dosha-theory-a-deconstruction/
28. Popper K. The Logic of Scientific Discovery. p. 61 London: Routledge Classics; 2002

29. Menon M, Shukla A. Understanding hypertension in the light of Ayurveda. *J Ayurveda Integr Med.* 2018 Oct-Dec;9(4):302-307. https://doi.org/10.1016/j.jaim.2017.10.004
30. Colman AM, ed. *Oxford Dictionary of Psychology.* Oxford: Oxford University Press; 2003
31. Kahneman D. *Thinking, fast and slow.* UK: Penguin Random House; 2012
32. Krishna GL. The holism versus reductionism conundrum. In: *Krishna GL. Rebuilding Ayurveda.* Varanasi: Chaukhambha Orientalia; 2024
33. Govindaraj, P. Nizamuddin S, Sharath A, Jyoti V, Rotti H, Raval R, et al. Genome-wide analysis correlates Ayurveda Prakriti. *Sci. Rep.* 2015; 5: 15786. https://doi.org/10.1038/srep15786

COMMENTARY

Cause, Effect, and Adverse Events: Evident-Based Medicine or Evidence-Based Medicine?

DAVID HEALY

Abstract

From the late 1940s to 1991, the adverse effects of prescription drugs were primarily established through the publication of detailed case studies by doctors in medical journals. Subsequently, pharmaceutical companies would change the labels of medicines accordingly. This will be called "evident-based medicine" in this paper. After 1991, what is now called "evidence-based medicine" offers a markedly different view on establishing the adverse effects of a treatment, with randomised controlled trials (RCTs) held up as the gold standard. The differences between evidence- and evidence-based medicine are often framed in terms of the differences between specific and general causation. This article outlines the origins of these distinctions and the confusions they generate among both clinicians and the general public.

Keywords: *evident-based medicine, evidence-based medicine, specific causation, general causation, regulation*

Introduction

It is critical to good clinical practice to not only establish the links between a medication and its effects, both good and bad, but also to determine the best way to establish these links — both are central to medico-legal practice and public health policies. Our views on how best to establish such links have shifted dramatically since the 1930s, when the first antibiotics were introduced.

In this paper, we outline what was the standard medical position, "evident-based medicine", for the first five decades of the modern era. We then illustrate how the link between suicidality and antidepressants meshed with the emergence of evidence-based medicine to create a new narrative. While evidence-based medicine was initially viewed as a means to restrict pharmaceutical companies and establish boundaries for their claims, in medico-legal settings, evidence-based medicine became a means to undermine the judgement of both individual clinicians and patients [1].

The Standard Medical Position

In 1947, Austin Bradford Hill undertook the first randomised controlled trial (RCT), comparing tuberculosis patients who had been treated with streptomycin to those left untreated [1]. Hill's trial was not inspired by Ronald Fisher's famous thought experiment [2], which posited that randomisation may serve as a means of controlling unknown confounders, as the histories of RCTs might suggest. Rather, Fisher was attempting to mathematise expert knowledge — not conduct a trial. If an expert knew what he was doing, and if randomisation controlled for all trivial confounders, then the only thing that could interfere with the expert being right was chance, to which a statistically significant value could be applied [2]. This position might hold true as a mathematical abstraction, but does not apply to actual medical practice.

Hill's RCT proved that streptomycin works, but it failed to observe that its effects are weak, that patients developed a tolerance to it over time, and that some of them went deaf from the treatment. An earlier Mayo Clinic trial, which had a control group but was not randomised, had in contrast, demonstrated that streptomycin's effects were weak and short-lived and that it had significant adverse effects [3].

Hill used randomisation simply as a means of fair allocation [4, 5]. He did not assume that doctors were experts who knew what they were doing and did not assume that randomisation would control for unknown unknowns, one of which may be clinical ignorance. If a doctor is not aware that a new drug can cause a particular problem, they may not notice or record it, and the effect will not be reported in the academic literature.

Clinicians did not rush to adopt RCTs following Hill. In the 1950s, the leading American advocate of RCTs was Louis Lasagna, who considered them efficient demonstrations of efficacy [6]. He proposed that companies should be required to use them to demonstrate efficacy in addition to safety as part of the 1938 Food, Drugs, and Cosmetics Act [7].

In 1960, Merrell, hoping to market thalidomide in the US, asked Lasagna to test the efficacy of the drug. His RCT demonstrated that thalidomide was an effective and safe hypnotic with no side effects — the study failed to highlight