

WATER - THE COMMON ELEMENT: A PHILOSOPHICAL LOOK AT THE SUBTLETIES OF WATER AND THE HEALTH OF THE ENVIRONMENT.

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Summary

The chief pursuit of all aquatic science is to come to know the rules that govern aquatic systems. In this pursuit many scientists move in the direction of greater diversity, where the laws that govern ecosystem relationships become increasingly confined to specific circumstances. Uncovering these types of laws can provide useful information for specific cases but it is necessary to balance this type of investigation with work that goes in the opposite direction i.e. towards the common laws. Knowledge of these laws is more widely applicable and indeed becomes increasingly so the closer they are to the "centre of the circle". This type of pursuit was, and still should be, the function of the *University*, which seeks to find the *unity* in *diversity*.

This paper takes a look at the laws, on the causal, subtle and gross physical levels, that govern water in all its forms. It seeks to reveal that the fundamental nature of water is to bond, to provide a matrix in which other processes take place, and that this applies at the causal, subtle and physical levels. It seeks to illustrate how these laws, that make water what it is, spread throughout the natural environment, lending qualities to all systems that are dependent on water. Wide ranging reference is made to scriptural and historical literature some of which is thousands of years old. From these, a "fresh" way of viewing the health of the environment is presented, and the consequences of disrupting and abusing the natural laws are discussed.

Introduction

This paper takes several steps back from where aquatic and environmental science finds itself at the close of the 20th century. Progress in science has been unprecedented over the last century, but in the process has taken many scientists on increasingly divergent paths where the knowledge that is discovered becomes specific to the particular circumstances. Naturally there are often moves to consolidate and to find the core of particular issues but rarely are there attempts to turn in the opposite direction to find the central principles on which the entire environment depends.

It is useful to refresh in our minds the role that we play as scientists in society. The Oxford Dictionary's definition of Science is "*the state or fact of knowing*", which gives us the ultimate goal of our endeavours. Many scientists add to their armoury in this

pursuit, by reading for the qualification of a Ph.D. degree but seldom is thought given to what this stands for. The definition of philosophy is, "*Love of wisdom*". Wisdom is "*capacity of judging rightly in matters relating to life & conduct*"

Oxford Dictionary

Any scientist who is able to know (truly) and is able to judge rightly in matters, would indeed be of value to society.

This paper will be looking back towards the principles that govern all happenings in the environment, which, if understood, would allow for a proper understanding of the more diverse rules and laws that govern things on the ground (or in the water!). This understanding will give a better idea of how the natural environment is meant to operate, and what happens if it is used and or abused.

First, it is necessary to break up the world we know it into three levels or realms of decreasing subtlety:

- Causal realm* - Creator, consciousness, laws of nature
Subtle realm - emotions, reason, mind, ego, space, things imperceptible to the senses
Physical realm - Physical elements e.g. water, air, earth, fire

As our interest is in water this investigation is confined to that element, but at the three different levels described above. This investigation starts with the finest level, the causal realm.

The casual realm of water

This realm is generally beyond the direct ability of the mind to comprehend or the senses to perceive. The laws that govern nature are usually only known by the effects that they produce, which informs us of the presence of the law e.g. we can observe and measure an apple falling to the ground, but can only infer that the law governing this exists. A useful point to start in making reference to these laws are the many scriptures and ancient texts of the world, many of which point out the special role of water in the creation of the earth. The first, which describes the origin of the world, comes from the ancient Vedic tradition which had a long oral history before texts were first written down several thousands of years ago.

“There was nothing whatsoever here in the beginning... As He was worshipping, *water was produced...*”

“Water is Arka. What was there like *froth on the water* was solidified and became this earth. “

Bṛhadaranyaka Upanisad 1.ii.1-2

The next reference comes from one of Africa’s greatest sons, an Egyptian man who was reputed to be the teacher of Moses. The following extract is from a new translation

made from the oldest surviving scripts, which were in ancient Greek. Again, he is describing the beginnings of the world and the role played by water:

“I saw the nature of the darkness change into a *watery substance*, which was indescribably shaken about, and gave out smoke as from fire, culminating in an unutterable and mournful echo. There was sent forth from the *watery substance* a loud, inarticulate cry. The voice, as I thought, was of the light.

Out of the light came forth the Holy Word which entered into the *watery substance*, and pure fire leapt forth from the *watery substance* and rose up: the fire was insubstantial, piercing and active. The fire, being light, followed the breath, and mounted up till it reached the fire, away from earth and *water*, so that it seemed that it was suspended from itself. And the earth and *water* remained in their own place mingled together, so that they could not be distinguished: and they were kept in motion by the breathing Word, which was laid upon them within hearing.”.....

Vs 29 “Having lifted them up, I became the guide of the race, teaching the words of God, how and in what way they would be saved, and I sowed in them the words of wisdom and they were nourished by the *water* of immortality....”

Hermes Trismegistus (c 1-2000 B.C.)- Libellus 1

And from the Judeo - Christian tradition, again the role played by water:

“In the beginning God created the heaven and the earth. And the earth was without form and void and darkness was upon the face of the deep. And the Spirit of God moved *upon the face of the waters*.

And God said Let there be light: and there was light. And God saw the light, that it was good: and God divided the light from the darkness. And God called the light Day,

and the darkness he called Night. And the evening and the morning were the first day.

And God said, Let there be a firmament in the *midst of the waters*, and let it divide the *waters from the waters*.

And God made the firmament, and *divided the waters* which were under the firmament *from the waters* which were above the firmament: and it was so. And God called the firmament Heaven. And the evening and the morning were the second day.

And God said, *Let the waters* under the heaven be gathered together unto one place, and let the dry land appear: and it was so. And God called the dry land Earth; and the *gathering together of the waters called he Seas*: and God saw that it was good. And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so.....

And God said, *Let the waters bring forth* abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven.

And God created great whales, and every living creature that moveth, which *the waters brought forth abundantly*, after their kind, and every winged fowl after his kind: and God saw that it was good.”

The Holy Bible, Genesis (c 1000 B.C.)

And some time later from the Middle East, again the origins of the earth and the role of water:

He said, “First of all, there was nothing but Allah. His throne was *over the water*, and He wrote everything in the Book and created the Heavens and the Earth”

“And Allah has created every animal *from water*: of them there are some that creep on their bellies, some that walk on two legs, and some that walk on four.”

The Koran (c 600 A.D.)

From India came a book of rules that starts at the beginning and goes to the most detailed laws of human conduct:

“He, desiring to produce beings of many kinds from his own body, first *with a thought created the waters*, and placed his seed in them.

That seed became a golden egg, in brilliancy equal to the sun; in that egg he himself was born as Brahman, the progenitor of the whole world (i.e. the Creator).

The waters are called narah, for the *waters* are, indeed, the offspring of Nara; as they were his first residence, he thence is named Narayana. (Nara is another name of the supreme soul)

The divine one resided in that egg during a whole year, then he himself by his thought alone divided it into two halves.

And out of those two halves he formed heaven and earth, between them the middle sphere, the eight points of the horizon, and the eternal above of the *waters*.

From himself he also drew forth the mind..... with particles of himself, he created all beings.”

Manu (c 200 A.D)

From one of the greatest Indian philosophers installed in the seat of Shankaracharya:

“In the first type of creation, the word was created by a cosmic being who was *lying on the water*. Once the word was created, Brahma (creator) came in and with the knowledge, the whole creation came into being.”

Shantanand Saraswati 1965

Also from the Vedic tradition, the role of water in the universe is vividly described in this allegory:

“A great Sage called Markandeya received the boon of everlasting life. The result was that he lived through all the yuga (ages of the creation) and when the cycle of creation was complete, and the universe was

withdrawn into Prakriti (nature) he found experience in the allegorical way men use.

He said that he found there was nothing but a *great waste of water*, and all was completely dark. He wandered across it looking for somewhere to rest. After a great while he was surprised to find a great tree growing in this waste of water. Under it, seated on a lotus, was a little boy. This boy shone with his own effulgence and was the only light. Making his way towards the boy, he greeted him and paid his respects to him, asking where he could rest. The boy invited him to enter his mouth, and the Sage found himself swept in. Inside the body was the whole universe. The boy was Narayana, the embodied Absolute. Everything was withdrawn into Him. The Sage spent an enormous time wandering about this universe. Finally, the boy called him forth, and he issued out of his mouth back to this *vast expanse of water*, and he watched the awakening of the universe. There was a sound, and a lotus grew out of the boy's navel. Seated on it was Brahma, the universal Rajas, the creator of the Three Worlds.

He looked in all directions but could see nothing. Because he looked in all directions, he is represented as having four heads looking in the four directions. Seeing nothing and not knowing what to do, the Lord Brahma went into deep mediation. Within he found the knowledge. Rising from this meditation, he began to form the creatures in the light of that knowledge.”

Veda (Shantanand Saraswati ref?)

The above extracts are largely quoted in full so that the context of each quote can be appreciated. The common feature alluded to in all of these extracts is that some causal/subtle form of water was the matrix into which the creation or universe was formed. This gives us some clue as to the nature of water in the causal realm, i.e. to bond, to hold form - thus causal water is the

bond between all things. This characteristic of water continues from the finest to the grossest parts of the universe, as shall be discussed below.

The above quotations taken from the scriptures, refer to the most subtle of the laws contained in the causal realm, but also within that realm are more diverse laws such as those which regulate the physical water that we are more familiar with. According to ancient texts, all of these laws can be divided into three categories depending on the *three constituents or substances* used in their make-up. These constituents, called the *guna*, have been described in texts dating from several thousand years ago - and are here given their Sanskrit names as there is no equivalent in English:

The Guna - three substances from which everything is made (Bhagavad Gita 18, c.1-3000 B.C.):

- Sattva* - peaceful, bright, conscious and healthy
- Rajas* - passionate and active
- Tamas* - dark, binding, heedless, absorbs consciousness

These guna lend their qualities to each of the realms, i.e. the causal, subtle and gross physical worlds.

Each of the realms or levels are described in below with indications of how they are affected by the dominance of one of the three guna. Note that in practice, seldom does a single guna exist on its own, but all three exist in proportions that can change with time. For example, our experience of the 24 hour day, is that the daylight hours are full of activity (rajas), the night tends to sleep (tamas) and at both dawn and dusk there is a time of peace and tranquillity. So, at the causal level with the three different guna dominating, the affect on natural laws will be different.

The subtle realm of water

The subtle realm is that area of mind, reason, emotion, ego. The occupants of this realm are not perceptible to the senses but are well known. The things of the subtle world are firstly the result of what has happened in the causal realm, and in turn are then responsible for what happens in the physical realm, so they are thus the link between the causal and physical levels. Again, the relevance of water to this is approached from the principle that water causes bond between things, in this case bond in the subtle area of mind, emotion, ego. Water manifests this bond in the subtle realm in a number of ways, which we know as taste, love, the holding of form and humour.

Table 1. In the Causal Realm, the laws of nature under the dominion of the guna.

Sattva dominating	Rajas dominating	Tamas dominating
Natural law which is peaceful, still, bright, conscious, healthy e.g. laws governing universal water	Natural law which is passionate, active, full of purpose e.g. laws governing clouds, rain, rivers	Natural law which is oppressive, binding, dark e.g. laws governing waste water

For many years (already in ancient Greece and creeping into the English language) it was recognised that water had a role to play in the subtle area of mind, where water was given various names depending on the way that it manifested. These were called humours (humour etymologically has the same root as humidity - essence is that of vapour or water). Four humours were identified and were thought to determine the physical and mental well being by their mixture (Table 3).

The kind of humour that makes us laugh is very variable. Good humour, related to the cheerful disposition of the sanguine (sattva)

has the function of dissolving (i.e. nature of a liquid) the ignorance with which

we surround ourselves. It is a move from a choleric or phlegmatic dominance (rajas or tamas) to sattva. The essence of good humour is always to laugh at the untruth about things, which reminds us of the truth. This has a great effect on those around us who may unknowingly be transported to a condition of mind which is cheerful instead of dark (the guna accordingly shift). The best comedians always laugh at ignorance, in particular the ego. Society is beset with

an unregulated mixture of these humours which leads to all sorts of ills.

Table 2. In the Subtle Realm, the bonding role of water under the dominion of the guna.

Water as a bond	Sattva dominating	Rajas dominating	Tamas dominating
taste	taste for fine things, music, food etc.	taste for fiery, passionate, active things, music, food etc	taste for the stale, gross, ugly, depressing
love	love itself, equal between all, without favour, love for fine things	passionate, attachment, relationship	bondage, jealousy, oppressive
holding form in the mind, e.g. Ideas, speech, design of physical objects etc.	according to its natural design, free of encumbrances, perfect in every sense e.g. an idea in mind perfectly suited to the needs of nature.	Full of activity with the form altered according to the need or desire of the day, causing things to go wrong e.g. an idea in mind designed to manipulate the laws of nature	Dark and ignorant. Form unnatural so that it becomes heavy, slothful, ugly, problematic and limiting e.g. an idea in mind expressing greed for what nature has to offer
humour	ruddy, hopeful, cheerful, optimistic, dissolving	anger, hatred	cool, idle, laid back, sluggish

Table 3. From antiquity, the link between water and the mind.

Body fluid	Humour	Mind	Guna
blood	sanguine	ruddy, hopeful, cheerful, optimistic	sattva
bile	choleric	anger, hatred	rajas
black bile	melancholic	depression, anxiety, fear	rajas - tamas
phlegm	phlegmatic	cool, idle, laid back, sluggish	tamas

It is important to appreciate that they have no deeper subtlety than the mind and are subject to easy change in response to changes in the guna. This is something that can be done by the application of reason.

The physical realm of water

Water in the physical realm is the most familiar to us as aquatic scientists. As has been described for the causal and subtle

realms, physical water can be influenced by the guna substance from which it is made. This will also be seen in the role that water plays in the internal and external environments.

The influence of the guna on the environment can be viewed from this perspective.

A healthy ecosystem...

It is useful to pursue this investigation towards that subject that is the focus of so much scientific investigation in the world, and in Southern Africa in particular, i.e. the health of ecosystems or the environment. As aquatic resource becomes more exploited, so the stresses mount on those resources, with consequences that are beginning to become more obvious. It has become common to refer to the health of these ecosystems as a measure which can be used for investigation or management. It is well to define what is meant by health:

Health - soundness of body; that condition in which its functions are duly discharged. Spiritual, moral or mental soundness. Well being, safety".

Root = whole condition.

Shorter Oxford Dictionary

The application of this definition to aquatic ecosystems is obvious. The ecosystem must be "whole" where its functions are being "duly discharged". In the field of ecology it has become customary to measure health using the diversity of organisms but this does not always hold. In the context of this paper, a different view of ecosystem health is presented. A truly healthy ecosystems will be dominated by sattva. In sattva everything will manifest as ordered, in place, light, harmonious and full of beauty. It is commonly said that such an ecosystem is "natural" i.e. it reflects the natural design for it in time and space. The modern trend is to try to measure this, but ancient literature says that such an ecosystem will be known when, "*the light of knowledge gleams forth from all the gates of the body*"

Bhagavad Gita 14.11).

The "gates of the body" here refer to the senses, which will be wide open allowing access to real knowledge if not cluttered by personal opinion (in the Bible the antithesis of this is referred to as "*seeing through a glass darkly*" - Corinthians..??). This is well within the realm of experience for all of us - we don't need hard data to be able to appreciate the natural tranquillity and good

Table 4. In the Physical Realm, the role of water under the dominion of the guna.

	Sattva dominating	Rajas dominating	Tamas dominating
Physical water	Universal waters	Water put to use in clouds, rain, lakes and rivers	Waste water
Rivers and lakes	Clean, pure, sweet, healthy, with the right amount of nutrient to support the natural order.....	Unnatural, regulated, with excessive nutrient, over-productive, eroding, altered biodiversity	Polluted, limited, dried-up, reduced biodiversity, gross forms
Physiological water	Performing its proper function of supporting chemical reactions, carrying nutrients and gasses, osmosis	Excessive or insufficient water, carrying excessive nutrients and other substances leading to unnatural activity, abundant and gross forms	Oedema of body, carrying waste and toxins, infected fluids

*this table has been developed from quotations taken from conversations between Mr. Leon Maclaren and Shantanand Saraswati (unpublished material).

health of a bubbling brook in its natural condition! The knowledge pours in, the dominant guna is sattva, and we find peace in ourselves. According to the Gita (14.6), Sattva brings about a union between the subject and the object (which leads to happiness and knowledge). Rajas and tamas will be present, but not dominating, showing themselves in the ordered activity, and in the death and decay that have their place in a natural river.

An exploited ecosystem...

An ecosystem dominated by *rajas* will be subjected to excessive activity. This will invariably reflect the presence of desire and usually greed in the subtle realm e.g. over-regulated river flow or excessive nutrient, both resulting from excessive human demands. The ecosystem will be

“stimulated”, full of activity, diversity may be high or low, productivity also high or low. If it stays in this mode, the balance will eventually swing to tamas and thus exhaustion (Gita quote ref....), after all, all things rest after activity. It is possible for the guna to swing towards sattva, but this requires the careful attention of a reasonable mind.

An abused ecosystem...

An ecosystem dominated by *tamas* will be suppressed so that “health” is no longer, diversity will be low and forms will be excessive and ill-proportioned, ugly and misshapen. This will be the result of heedless and ignorant desires leading to over-exploitation and generation of waste. Such an ecosystem becomes oppressive and useless. Being dominated by tamas it has a

seriously negative impact on all who are exposed to it, both in the mind and in the body. Reference to this can be found in the Bhagavad Gita:

“Darkness, heedlessness, inertness, and error, - these arise when Tamas is predominant...”

Bhagavad Gita reference

What choices do we have...?

These three substances out of which everything is made in the causal, subtle and physical realms, i.e. the guna, will operate when conditions are right for them. If nature were left alone, all would take care of itself, but this is not realistic in the modern world. In a managed environment, with reason it is possible to swing the guna balance towards that which would bring greater harmony, or in the case of aquatic resources, health to rivers and lakes. The Gita gives some direction about the ways in which we could act which would bring about these changes in the guna.

“Sattvic action - which is ordained, which is free from attachment, which is done without love or hatred by one not desirous of the fruit

Rajasic action - which is done by one longing for pleasures, or done by the egotistic, costing much trouble

Tamasic action - which is undertaken from delusion, without regarding the consequence, loss, injury, and ability”

Bhagavad Gita 18.21-23

Alternately it is possible for reasonable people (i.e. people in sattva) to make the laws that protect the resources and thus keep them closer to their natural state. That this is not a new idea can be seen from 2400 years ago in Athens where it can be seen that the “polluter pays” principle is not such a new idea:

“Water is the most nourishing food a garden can have, but it’s easily fouled,

whereas the soil, the sun and the wind, which co-operate with the water in fostering the growth of plants that spring up out of the ground, are not readily interfered with by being doctored or channeled off or stolen. But in the nature of the case, water is exposed to all of these hazards. That is why it needs the protection of a law, which should run as follows.... Anyone convicted of fouling water by magic poisons should, in addition to his fine, purify the spring or reservoir, using whatever methods of purification ... as appropriate to the circumstances and the individuals involved.”

Plato (Laws - c. 400 B.C.).

In providing guidance to society, it is important that scientists acknowledge the causal and subtle worlds and the role they play in the physical world that we so like to measure.

Some direction comes from two modern philosophers who have viewed the progress of science and its application in society with disquiet:

“The scientists precondition to certainty is bound to tangibility, whereas the subject of certainty itself remains intangible..... metaphysics begins where physics exhausts itself. The scientific world has acquired a vast body of empirical knowledge and reaches the principle of uncertainty only because it ignores the principles of metaphysical certainty”.

Shantanand Saraswati ()

We need to... *“bring the gross (physical) and subtle worlds into line. In natural conditions the two co-exist. When not in relationship there is bound to be chaos, which is pretty obvious in the world”.*

Leon Maclaren, 1991

Scientists have to overcome their reliance on tangible data to prove all things. This reliance has attracted to the profession severe criticism and distrust from the

broader society as scientists again and again contradict one another and fail to be certain about their conclusions. As noted above by Shantanand Sawarsati, certainty will be found beyond the tangible.

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