



## Mysticism and Science

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***"Hiranmayena patrena satya-syapi-hitam mukham,  
Tattvam pusannapavrnū satya-dharmaya drstaye."***

**Means:**

***"The face of Truth is covered by a golden lid;  
remove, O' Sun, that covering for me; the  
practitioner of Truth, So that I may behold It."***

***-Isavasya Upanishad||5||***

***"The fairest thing we can experience is the mysterious. It is the  
fundamental emotion which stands at the cradle of true art and  
science. He who knows it not and can no longer wonder, no  
longer feel amazement is as good as dead, a snuffed out  
candle."***

***- Albert Einstein***



## 1.1 Mysticism vs. Religiosity and Spirituality

Ever since the dawn of human civilization, been keenly observing the nature in its grandeur and man has vastness, along with its rich diversity of fleeting existences. This has not only inspired awe and wonder in him but also curiosity and courage to address the mystery behind all these that he observed and experienced. This was possible only when the basic needs of food, shelter and security for survival was ensured. But since then the inquisitive human mind has been struggling to comprehend all aspects of nature within himself and outside as well asking even very deep questions about temporal and eternal, about Truth and Reality, about the source of all existence, about the origin and the cause behind all occurrences. Man has been continuing his search even till today in every possible way with all different resources or capabilities available within his body, mind and intellect; to find satisfactory answers to all those questions. This perennial pursuit for comprehending nature with all its hues has been the natural obsession with man at all ages, which has given rise at first to various kinds of thoughts of religiosity and spirituality with all their idealistic and mystical dimensions and subsequently later in nineteenth century to objective materialism of Science in logico-rational dimensions.

We may first reflect upon this initial flowering of religiosity in human mind for understanding the world that seemed to be shrouded with mystery all around. To unfold this mystery to certain extent, the primitive mind must have been stretched in all possible ways and activated with all kinds of imaginations, sometimes very naively with a feeling of fear or awe and wonder. In this process it must have brought to the fore divine causes behind all the mysterious natural phenomena. It must have therefore created myths and legends, fancy stories and fictions to weave them all in a religious fabric. Albert Einstein had a statement in this regard which we may quote here as follows:

*"With primitive man it is above all fear that evokes religious notions-fear of hunger, wild beasts, sickness, death. Since at this stage of existence understanding of causal connection is unusually poorly developed, the human mind creates illusory beings more or less analogous to itself on whose wills and actions these fearful happenings depend. Thus one tries to secure the favor of these beings by carrying out actions and offering sacrifices, which according to the tradition handed down from generation to generations, propitiate them or make them well disposed to a mortal."*

*Albert Einstein, in Ideas and Opinions p.36-3*

Thus early man saw divine signature in natural forces and believed them as gods or goddesses with different attributes whose favors can be sought for through prayers and



worships, rites and rituals. With little more maturity of mind and scholarly attitude, some wiser men in the past contemplated deeply and intuitively to the extent of losing their own self in deep quietude to emerge after a sudden flash of illuminating revelations regarding the mystery. This could happen, as it is told, in an elevated state of consciousness providing a good grasp over the mystery surrounding the apprehended truth behind. This also leads to the realization of divinity already within one's own self. Swami Vivekananda said that each soul is potentially divine. The goal is to manifest this divinity within by controlling nature external and internal to be totally free. This in fact is the essence of religion. Doctrines and dogmas, rituals and mythology, philosophy and theology are only the periphery of religion. According to Dr. S. Radhakrishnan, the famous philosopher-statesman of India, Religion is the participation in the mystery of being to find wisdom or insight into reality. *"Religion is realization. Religion is being and becoming. Religion is the manifestation of divinity already in man."* - Thus said Swami Vivekananda in defining religion. Thus religion with all its philosophy, rituals and practices can acquire meaning and significance only when it culminates in its spiritual dimensions as above leading to direct or immediate perception of the supreme Truth or Reality. Theist could call this God realization, or "seeing God" as Christ himself called it i.e. the vision of God-head and so on. Such systems of thought and practices including all its naivety as well as the scholastic elements were prevalent from the earliest era of human civilization, which has been today. This, including sorcery, occultism, rites, rituals, prayers and worship as well as the rigorous spiritual practices like meditation etc., has been the characteristics providing a mystical dimension to almost all the religious traditions of the world. But one thing must be emphasized that as far as the content of spirituality and the mystical realizations are concerned, the sameness and commonness of the core of all religious traditions are fundamentally not different inspite of differing practices, rituals, theologies and philosophies. The same God is reached through different paths and the realization of the same spiritual content and mystical insights are described in different languages and different forms in various religions.

It would be worthwhile here to point out the ancient trends of thought in different parts of the world prevalent in the great religions like Taoism/Confucianism, Judaism, Christianity and Islam apart from Hinduism, which shaped the major civilizations that exist today. These religions seem to be quite at odds with each other when we look at their exoteric forms such as their rites, rituals, prayers and practices as well as their fundamental doctrines about the nature of Reality. However if we dig more deeply, we find within each of these religious traditions an inner stream of mystical teachings proclaimed by those seers, who had a direct realization of the ultimate nature of Reality. These seers or sages, saints or wisemen are termed as mystics according to the present parlance. If we compare the testimonies of these so called mystics about the nature of this Reality, we find that despite vast separations in time, place,



language and culture; they were strikingly similar. Therefore one may view these teachings as constituting a single perennial philosophy like an irrepressible cosmic wave train arising again and again in the human psyche. For example the commonality of this perennial philosophy in all the great traditions can be illustrated through several samples of quotes by mystics of respective religions on several points demonstrating the same concept.

In all religions it is believed that the ultimate Reality, be it called Brahman (Hinduism), Buddha-nature (Buddhism), Tao-the way (Taoism), Ein-sof (Judaism), Allah (Islam) or God (Christianism); is spiritual in nature, which cannot be grasped by thought or expressed in words. The spirit-supreme as it is thought is immeasurable, inapprehensible, beyond conception, beyond reasoning, beyond thought and never born.

In Hindu mystical tradition, it is asserted emphatically that such super sensory experiences and perceptions of a definite subtle reality can be attainable by a human being in this very body but by means beyond the senses. These experiences are transcendent as they transcend the sense perceptions. This perception is born of subtle intuition through the mystical process called 'Yoga', which has been vividly elaborated in Vedic Upanishads. Similarly the Lankavatara Sutra of Buddhism says that words and sentences are produced by the law of causation and are mutually conditioning for which

They cannot express the highest and the ultimate Reality. The Taoist Lao Tzu said that *"the Tao which can be named is not the True Tao"*. Ibn Arabi, a muslim mystic said that *"The Gnostics know, but what they know cannot be communicated. It is not in the power of the possessors of this most delightful station....to coin a word which would denote what they know."* According to the 5th century Christian mystic Pseudo Dionysius, the Areopagite- *"That one which is beyond all thought is inconceivable by all thought."* In fact all mystics ultimately speak of similar kind experiences although in different languages. Therefore Sri Ramakrishna Paramahansa once said, *"All jackals ultimately howl alike."* All mystics are essentially spiritual seekers with an insatiable passion and irresistible pull of a God-hungry soul craving for God. The God-hungry or god-thirsty soul, the hallmark of a spiritual seeker or mystic, then finds in God or the supreme reality; appeasement, contentment, joy and peace. The state of spiritual hunger is the commonest feeling or emotion among the practitioners of all religions. The nature of the experience of being overwhelmed after the realization of the supreme truth as God may differ from one religion to another; but the content is the same, though expressed differently. The sense of wonder and awe that the spiritual seeker experiences in the overwhelming majesty and splendor of God's presence is identical across religious boundaries. It goes beyond even the sphere of religion to share its grounds with the higher reaches of the so-called materialistic science. In this context, it is worth quoting the statement of Albert Einstein; *"My religion*



*consists of a humble adoration of an Illimitable Intelligence that our dull faculties can comprehend only in the most primitive forms". He also further wrote that "The most profound and the most sublime emotion one can feel is the sensation of the mystical. It is truly the sower of all science. He who is a stranger to this emotion, who can no longer stand and wonder in rapt awe, is as good as dead. To know that what is impenetrable really exists, manifesting itself as the highest Wisdom and the most radiant Beauty, which our dull faculties of the senses can comprehend only in the most primitive form; this feeling is the center of true religiousness. This cosmic mystic consciousness is the main spring of all scientific research."*

The state of being overwhelmed and thrown overboard with one's own little self and casting off one's own stupid ego altogether has been called by Hindu spiritual aspirants as "Samadhi". Buddhist seekers call this ego-annihilation or extinction as 'Nirvana'. The aspirations, the strivings and struggles of spiritual seekers of all religions which focus on the central theme of seeking God become ultimately richly rewarding in seeing Him, perceiving Him in all beings and serving Him with love and devotion through His manifestations in various forms and names in nature and all beings. Having come in touch with God's compassion and glory, the spiritual seeker gets direct knowledge of cooling graces, the spiritual seeker longs to jump head long into the infinite ocean of God's Love and Sweetness. In an impersonal language of the knowledge seeker called 'Jnani', the aspirant longs to melt away into and become one with the supreme Truth or Reality. Sri Ramakrishna states. *"A salt doll went to measure the depth of the ocean. Who would remain to tell of the ocean"*? The spiritual seeker like the salt doll, was happy to bathe in the cool waters of the ocean, but soon realized that he was to lose himself in the ocean gladly and willingly in order to realize the infinitude of the Supreme Reality, in spirit and in truth. This is the supreme bliss experienced as a climax when the seeker (Drusta), the sought (Drusya) and the process of seeking all melt and merge into one-ness of the soul. This is the unitive experience of the mystics. Sri Ramakrishna, having realized and seen his dearest God head whom he called as the Divine Mother Kali, intuited Her nearer than his own breath, longed to realize this Divine in ever so many forms in ever so many varieties. He wanted to know how Christians prayed and realized God, how the Muslims worshipped and realized God and so on. He also longed to realize God in the impersonal aspect as formless and nameless, as consciousness, as light supreme beyond all lights. It is said that Ramakrishna, the spiritual Guru of Swami Vivekananda tasted and experienced God in variety of ways, through various. Religious paths as well as the innumerable paths of Hinduism, into which he was born. This is in fact the hallmark of the mystic, who is like a glutton in the spiritual realm, never satisfied with realizing Him in one particular way only. This attitude and approach of a mystic is the common characteristics in almost all religious paths. To dive deep into the ocean of God's presence, with its infinite beauty and glory to taste his divine grace, love and compassion in ever so many varieties is the passion and the urge cutting across all religious bearings which unifies and also enriches all religions and faiths.



In spite of all these generalities that we discussed about mysticism of all the various world religions; it is no doubt that the Hindu mystical tradition would stand out with its uniqueness in its depth of perception, clarity of expression and assertiveness with its spiritual contents vividly experimented and experienced contemplatively and intuitively over thousand years by sages and seers starting from the Vedic era. When logico-rational thinking based on today's scientific materialism had not taken its roots firmly anywhere in the world during the ancient and medieval period; sages and seers and Wiseman of the East on this Indian subcontinent had accomplished their goal without renouncing their journey in search of the ultimate Reality in such a spiritual path. They believed firmly that the ultimate Truth being spiritual in nature is beyond sense perception and intellectual comprehension. This subtle Reality can only be directly accessible by subjective experience through appropriate meditative practices. This philosophy had been vividly narrated in innumerable number of texts in various ways by so many sages and seers, saints and spiritual seekers, mystics and Wiseman over thousands of years that have no parallel in any other religious traditions. This, we would address in separate chapters to bring it to fore that the so called mysticism is in fact quite natural and there is nothing mystical or mysterious about the truth discovered through the transcendental power of Yoga in the spiritual realm. It is not supernatural although super sensory. The class of perceptions through the senses when classified, analyzed and explored is called '*Science*', or more precisely it is the science of matter. Matter, though not understood fully even in the highest levels of science, can be simply defined as something measurable and perceivable by the senses. Therefore anything that is not measurable and not amenable to sense perception like feelings, emotions, values mental state, psychic phenomena etc. belonging to the inner realm could be classified as non-matter. Perceptions of these non-material realm born of the subtle intuition through the mystical yogic processes are also classified, analyzed and explored to be called in other words as spirituality or more precisely "*Science of the spirit*". Both "*Science*" and "*Spirituality*" have their definite laws governing them. The Hindu mystics therefore say that the truths of the spiritual realm are as natural as the truths of the scientific realm of matter. But it is only our ignorance of the laws pertaining to the spiritual realm that makes us feel that they are super-natural and hence mystical. It is just like a person ignorant of the scientific laws of matter, who may give some mysterious explanation of the lunar and solar eclipses as the works of some supernatural beings - such as the demon Rahu or Ketu gobbling up moon or Sun in the process. Similarly, ignorance of the laws of spirituality, the science of the spirit; would lead to some queer, weird and supernatural explanations for the so called mystical experiences. Mysticism is thus quite natural, rational and simple as much as emotions like love, joy, sense of beauty and wonder. But rationality and logic of the present mind trained to translate and analyze the sensory inputs only are not adequate to understand the mystical states of experience. An altogether different training of the mind with purification and refinement of the intellect are sine qua non for such understanding; which has been



emphasized in Yogic practices. Thus the mystic experiences do not contradict reason, but they do transcend the reason as we ordinarily understand it.

## 1.2 Science vs. Spirituality

Ancient India was a land whose ideas and thoughts were free flowing in all possible directions covering all possible aspects of inner as well as the outer world perceived both by extra-sensory or usual sensory modes. so as to make the Indian civilization as one of the unique civilization in the world with a vibrant and comprehensive tradition of spiritual as well as natural science flourishing simultaneously together. The sages and seers of this land who contributed to this rich culture as great thinkers were also scholars and scientists in their own capacity. This aspect would be separately discussed at appropriate place in a subsequent chapter. However the purpose of mentioning it here is to contrast the situation in western scenario, where science and religion were locked in a protracted battle over a long period. Ultimately by seventeenth century onwards, Science could raise its head and quickly gain ground by the established methods of analysis and experimental observations based on quantitative mathematical logic. The explanatory power of science exploded in due course and with it humanity's capacity to manipulate and control nature. Thus the emergence of science could narrate a story of how human mind accessed intimate knowledge of the workings of the Universe and how this expertise ultimately contributed the marvels of technology as the greatest gifts. As a result the idealistic world view of the Middle Ages was soon replaced by materialistic world view. According to this view, Nature worked according to mechanical laws and everything in this material world could be explained in terms of the arrangements and movements of the constituent parts. The material universe is like a machine and nothing but a machine and therefore all its workings are absolutely determinable and predictable with all accuracy. Matter is the prime constituent of nature which has no purpose, life or spirituality. This mechanical picture of nature became the dominant paradigm of science in the nineteenth century. It guided all scientific observations and formulations of all theories of natural phenomena giving absolute faith on this scientific method to give exact knowledge of truth and reality concerning nature. Hence the core essence of all religious traditions, the spiritual philosophy etc. was not granted any adequate legitimacy by the scientific community by categorizing it as 'Mysticism' to mean it as totally baseless, unclear, vague and confused thinking. Considering spirituality as mere speculative thoughts from subjective experiences, it has not been usually acceptable as an intellectual scheme. It is believed on the other hand that science being based on pure reason and intellect can be made verifiable and evidential enough to be considered as the only legitimate path to gain accurate knowledge of the Truth and the Reality.





Nevertheless, the goal of spirituality and science being primarily the same to search for the Truth and Reality, it is mainly the notion about what constitutes the Truth and how it can be known appears to be different. While Science claims its scientific truths could be objectively tested and verified empirically; spirituality apparently demands its Truths to be experienced only subjectively in a meditative mode to be accepted mostly on faith and beliefs. There appears also the discord regarding the fundamental nature of Reality. Spirituality insists that the ultimate nature of Reality is spiritual which is not accessible to human sensory perceptions and intellectual deliberations and apart from this spiritual Reality, nothing would or could have the ultimate existence. On the other hand, science, adopting a strictly materialistic paradigm argues that everything could be reduced to and explained by the interactions of independently existing material parts or its sub structural constituents and the physical forces which act on them. For centuries people hoped that the abstract mathematical understanding of the physical world provided the way by which science would shed light on the true nature of reality as stated above.

However, in an act of cosmic irony, the expanding continent of knowledge provided by science found itself surrounded by ever longer shores of ignorance. Being able to probe the unseen atomic and subatomic world towards the end of the nineteenth century and the beginning of the twentieth century science had discovered at its heart what is called the quantum weirdness. Subatomic particles like electrons, protons etc. which constitute an atom, including the atom also, display two contradictory properties such as a wave or as a particle depending on if and how they are observed. This is called the wave-particle duality. Science also encountered an insurmountable fundamental physical limit on how much it can ever reveal information about a particle, which is popularly described as the uncertainty principle. Hence at the subtle quantum level of reality, any certainty is lost and measurements can only be expressed as probabilities. For instance, the location of an elementary particle is probabilistic in the sense that it could be observed anywhere in the universe at the same instant no matter even if with sufficiently low probabilities. As a result, a subatomic particle can appear at places which should otherwise be impossible. This is called quantum tunneling. The discovery of a zoo of elementary particles and its mirror world of anti-matter particles revealed a far greater structure to reality which any one had not dared to dream of. Empty spaces which we may now call quantum vacuum was found to be permeated with energy and nothingness became something called zero point energy, which has been described and experimentally observed through what is called Casimir effect. Dramatically the very act of measuring a quantum system changes its properties, appearing to give the observer a special status, such as the choice of an observer in some experiment at one moment could alter even the past. This is called the delayed choice experiment. There are many other perplexing enigmas as one encounters in the





quantum realm which we may elaborately address in a separate chapter highlighting the progress, prospects and limitations of science, ultimately demanding a significant change in the materialistic paradigm. Thus in the last one hundred years, science has experienced dramatic revolutions in its new discoveries that has been, quite literally, world shattering. This revolution was mainly due to the advent of special theory of Relativity by Albert Einstein and the quantum Physics, which completely changed our ideas and understandings about the nature of space, time, matter and energy. It totally shattered the materialist world-view supported by the older classical Newtonian science. One of the founder of quantum Physics, Werner Heisenberg described the situation in these words:

*"Quantum theory has led the physicists far away from the simple materialistic views that prevailed in natural science of nineteenth century. In short, Quantum Physics has rendered the materialistic paradigm scientifically untenable."*

Again the fundamental reality which Quantum Physics described is not at all incompatible with that testified by spirituality. For instances the paradoxical form of expressions in describing the sub-atomic phenomena both as waves and as particles had to be resorted in Quantum Physics. But these two concepts are mutually exclusive, because certain entity cannot be a particle (localized in space) and a wave (a field spread over an extended region of space) at the same time. However the two aspects taken together complimenting each other as wave-particle duality is the characteristics called complementarity principle. This aspect along with many other Quantum weirdness we hinted earlier are no less mystical. Mysticism also characterizes what they call 'Reality of realities' as the whole that comprises the eternal as well as the temporal.

Another perception regarding the relationship between subject and object is also worth mentioning here. John S. Bell, a physicist mathematician remarked that *"the subject object distinction is indeed at the root of the unease that many people feel in connection with Quantum Physics. Some such distinction is dictated by the postulates of the theory, but exactly where or when to make it is not prescribed"*. This enigma has been addressed in mysticism. According to Hindu mysticism as expressed by the mystic Anandamayi Ma; -

*"Seer-seeing-seen; three there are modifications created by the mind, superimposed on the all-pervading consciousness"*.

Similarly the Tibetan Buddhist Master Long Chen Pa declares that: -

*"There is no duality of mind and the object and its perceiver is void in essence."*



In fact it is not only in science, the situation in both science as well as religion has changed dramatically by the early of this twenty first century to such an extent that we must rethink and re-examine the terms in which the whole controversy between science and spirituality had been cast in yester years. During the last century, there has also been a veritable explosion in our knowledge and understanding of humanity's great religious traditions through the availability of large number of new translations of sacred texts from around the world. There have also been ample cross-cultural interactions providing better understanding amongst people of different cultural backgrounds. As a result our basic understanding about spirituality has been reshaping significantly over these years. It has been made clear that, at the core of all major religions, there exists an underlying mystical thought which exhibits a remarkable degree of cross-cultural agreement. More interestingly these apparently mystical ideas and teachings resemble in many respects with several aspects of modern science as pointed out briefly earlier. Although it is said that this so called mysticism recognizes faith to play a significant role in the spiritual journey, it also at the same time insists that faith alone is not enough. If faith solidifies into dogmatic belief, it becomes an obstacle to further progress. Therefore Buddha used to advise his disciples not to rest on mere faith and admonished his followers by saying that *"As the wise tests gold by burning, cutting and rubbing it on a piece of touch stone; so are you to accept my words after examining them and not out of regard for me."*

Thus as scientific truths are claimed to be verifiable by observations made within the contexts of various kinds of physical experiments; spiritual truths can similarly be verified by the insight gained within the context of various kinds of spiritual practices including meditation. In Indian Vedic tradition, a very effective physical technology in the name of '*Yogic Processes*' as elaborated in Patanjali Yoga- Sutra had been developed to train the body and the mind of the spiritual practitioners which is to be followed to obtain direct contemplative experience of the truth. Hence mystical teachings as well cannot really be understood until one's own contemplative experience confirms it. So it implies that spirituality that begins with faith ultimately ends in a certainty; which each one must discover in one's own practice.

But despite all these, a significant number in the scientific community do not accept spiritual knowledge to be as objectively true as the scientific knowledge since after all it is entirely based on subjective experience only. On this point it would be very illuminating to record the views of Bertrand Russel, the philosopher from his book - **An inquiry into Meaning and Truth** - where he remarks on the so called objectively true scientific knowledge as follows:



*"We all start from 'naive realism' i.e. the doctrine that things are what they seem. We think that grass is green, that stones are hard and that snow is cold. But physics assures us that the greenness of grass, hardness of stones and the coldness of snow are not the greenness, hardness and coldness that we know in our own experience, but something very different. The observer, when he seems to himself to be observing a stone, is really, if physics is to be believed; observing the effects of the stone upon himself. Thus science seems to be at war with itself, when it most means to be objective, it finds itself plunged into subjectivity against its will. Naïve realism leads to Physics and Physics, if true, shows that naive realism is false. Therefore naive realism, if true, is false; therefore it is false."*

Here, what Russel refers to as 'Naive Realism' is a core concept in classical philosophy of perception and philosophy of mind; which means that our senses allow us to perceive objects directly without any intervening process. In other words objects of sense perception are not merely any representations of external objects, but are in fact the external objects themselves as they are. These objects obey the laws of physics and retain all of their properties regardless of whether or not there is any one to observe them. They are composed of matter, they occupy space having properties such as shape, size, texture, smell, taste, color and other properties that are usually perceived correctly. However according to Copenhagen interpretation of quantum physics by Bohr and Heisenberg etc. material objects before observation by the observer may have only certain potentialities or tendencies for various properties. Act of observation by observer only makes them appear with some definite properties. Accordingly naïve realism is contrasted with some form of idealism to claim that no world exists apart from mind dependent ideas and our conscious experience through the sense data is not of the real world but rather of an internal representation of the world. Therefore in twentieth century social psychologists also argue against the stance of 'Naive realism' proposing instead that perception is inherently subjective. John Locke, the notable English Philosopher held that the world only contains the primary entities or objects that feature in a corpuscular scientific account of the world and the secondary properties or qualities are in some sense subjective and depend for their existence upon the presence of some perceiver who can observe the objects. Finally we must quote a no less mystic, twentieth century scientist and philosopher, Albert Einstein addressed in particular to the Scientists as an eye opener; - *"Everyone who is seriously in the pursuit of science becomes convinced that a spirit is manifest in the laws of the universe – a spirit of man and one in the face of which we with our modest power must feel humble."*



Such points of apparent convergence between science and mysticism unfolded during the recent centuries have been very exciting. This has certainly opened up possibility of creating a new sacred world-view in which both science and mysticism would be seen as distinct and yet complementary ways of exploring and explaining the same underlying reality.

## 1.3 Conclusion

Therefore in the changing scenario, as discussed above, it would be intellectually very useful to revisit the mystical teachings of the religious traditions with particular emphasis on Indian contributions to this thought system to bring it into new light of scientific acceptability in certain clear terms whichever possible. This would be convincing enough when we would remind ourselves of the inadequacy of classical Newtonian science with its limitations in the microscopic material realm. The subsequent modern scientific view about space, time, matter and energy as pictured in theory of relativity along with the observer-object connection in transforming probabilistic existence of quantum reality to actuality as described in Quantum theory must also be discussed to certain extent. Then only it may be apparent that spirituality and science are in fact referring to the same contents but in different languages, one metaphorically which the other mathematically through different modes of realization such as one contemplatively and the other intellectually only. In the chapters to follow we would venture to achieve this goal, though may not be totally exhaustive by itself.