The Puruṣārthic Principle:

Nature and Consciousness in Physics and Sāmkhya/Yoga

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My goal today is to suggest that two ideas from very distant realms of thought might be usefully brought together. **[slide 2]** The ideas are the "anthropic principle" that arose in quantum physics to explain the "measurement problem," the fact that definite events at the subatomic level happen only in the presence of a conscious observer; and the basic principle of the Sāṁkhya/Yoga schools of Indian thought called puruṣārtha, the idea that the psychophysical process of the world (prakṛti) acts "for the sake of" consciousness (puruṣa). The anthropic principle has many forms, but I will only discuss its "strong form," the idea that an observing consciousness is necessary for the world process to appear, or to be at all. Consciousness, for the anthropic principle, exists for the sake of the world process. Puruṣārtha asserts the converse, that the world process unfolds, or is enacted, for the sake of consciousness. **[Slide 3]** Can we fuse the conceptual horizons of these two ideas, the modern speculation of quantum physicists that the world process needs an observer; and the two thousand old Indian realization (which seems to have been the product of yogic meditation) that consciousness in some way needs the world process?

[Slide 4]

The problematics of the two realms of thought are very different. Sāṁkhya/Yoga aims to show us —and help us to realize, through yoga—that we are the conscious self (puruṣa) and not the assertion of self (ahaṁkāra, asmitā)—which is actually something we are conscious of; that

we are consciousness (cit, citi) and not the possessors of consciousness, as we implicitly assume. This egoistic way of being is "illusion" or "ignorance" (avidyā), and its overcoming is the aim of conceptual thinking and meditative practice. Physics is less sure of its aim, but does know that it needs to understand the "quantum enigma" resulting from the equations that described reality as a manifold of probabilities of phenomena being observed. The necessary role of mind in nature seemed wildly improbable to the authors of the theory that demanded it, and the question continues to stir debate.

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What is called the measurement, or observer, problem is the fact that the particle/wave function that describes the universe propagates itself forever, continually offering statistical probabilities of observations that do not take place within the theory but only outside it, when a conscious observer sees which event, within the matrix of possibilities, actually occurs. A quantum process state of affairs described by the mathematical formalism (the Schroedinger equation) turns into a classical, "thing" state of affairs, through an event described as a "collapse of the wave function." We notice that the event (the collapse) and the observer arise together in a relationship that resembles Husserlian "intentionality," or "awareness *of*." There cannot be an observer before the observation or an event not observed. In this way we see that the anthropic principle is actually a principle of intentional experience in which observer and observed arise in the same event.

[Slides 6 and 7]

As these two slides show, the probabilities that existed during the process phase are limited, after the observer makes her observation, to the thing that actually was seen.

The strangeness of the quantum enigma evokes what I submit are religious feelings in its thinkers, feelings that evoke God and questions of life and death. A famous example, usually used to make fun of the theory but intended quite seriously by its author, is that of "Shrodinger's cat." **[slide 8]** The experimenter, whose work would be forbidden by ethics committees today, would lock a cat in a cage hooked up to a Rube Goldberg contraption designed to release cyanide into the cage if a quantum wave function is observed to hit the cat's Geiger counter . Until she opens the cage, the experimenter does not know which way the electron went, and consequently does not know whether the cat is dead or alive. She also does not know whether she will be relieved or appalled (and, one would hope, feel guilty). This shows again that the observer and the observed are part of a single event, as the states of the observer are just as distinct as those of the cat.

[Slide 9]

Stranger and stranger, physics today has found what some think a way around the enigma in what is called the "multiverse" idea, which asserts that all possible states predicted by the wave function are in fact realized in different universes. Each possible observation brings about a different world, events bifurcate at every moment of observation. The cat is both alive and dead, the experimenter both breathes a sigh of relief and is filled with self disgust.

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Even the multiverse idea fails to eliminate the observer question, I think, since the moment of bifurcation is still the act of observing. We still ask, do things happen (in one world or many) so that they can be observed or made conscious, do they happen so that there can be an observer, or (putting these together) do they happen so that intentionality can take place?

[Slide 11]

[Slide 12]

In Sāṁkhya/Yoga, actions (karmas) flow out of a previous state in which they were inherent (the term satkārya names this preexistence of the "effect" in the "cause"). The evolution of the person is mostly downhill, from better to worse, because of the avidyā (ignorance, illusion) inherent to our lives, where traces of past actions motivate, seduce, or impel us to seek pleasure and survival without awareness of our real aim, which is the enjoyment and finally the release of consciousness which seems forced to experience our deluded, potentially endless, flow of suffering. Although most of human nature tends toward suffering and delusion, there is a fraction of it that can potentially recognize the true state of affairs (the jñāna bhāva): all actions are performed only for the sake of an enjoyer, or seer, and for the sake of that enjoyer's emancipation from the world of suffering (these two aims are called in S/Y, as later in tantra and other schools, bhukti and mukti or mokṣa). It is generally recognized that the flow from suffering to suffering mediated by action (karma) is almost identical to the Buddhist pratityasamutpāda. Parenthetically, I suggest that the goal of pleasing and liberating puruṣa also corresponds to a Buddhist aim, the fundamental objective of nirvāṇa.

[Slide 13]

It is evident that the actor (kartṛ) in S/Y and the observer in quantum physics are very similar. Both are bound in an embedded relationship with an intentional object. Both appear to be outside the world process but are actually part of it. The observer in physics comes into existence with the object and is unthinkable without it, as the person in S/Y is made of "subject" and "object" components that arise at each moment of karma. I will suggest that in physics as in yoga, the observer is in reality an object seen. The question will be: What in physics corresponds to puruṣa, the seeing consciousness.

[Slide 14]

I believe that the key to understanding the similarity and difference between S/Y and physics is the idea, discussed in the Sāṁkhya Kārikā, but with a rich early history, of the ahaṁkāra, the "I-maker" or "utterance of the word, 'I'!" as the term was understood by van Buitenen. In Sāṁkhya, reality is divided into two interdependent parts, puruṣa and prakṛti, consciousness and psychomaterial action. As discussed, prakṛti acts ultimately only for the sake of puruṣa's enjoyment and release (bhukti, mukti). The ego principle, ahaṁkāra, part of prakṛti, develops immediately after buddhi (insight) and before manas (the substance of thought), which in turn evolves into the subject and object elements that I understand as an intentional relationship. The ahaṁkāra-motivated mind, implicitly but not clearly knowing its aims for the sake of puruṣa, mistakenly takes its representation of the puruṣa self as an object, resulting, in Ian Whicher's words, in "the self as seen." **[Slide 15]** There is an attempt to establish a self in the objective world, a muddling of categories called ajñāna or māyā. The intentionality that results produces a situation where "It's about me." Ahaṁkāra, an object, the "self as seen," becomes the focus of action (karma). This suggests a new reading of the anthropic principle. The

world process is brought about not for the sake of consciousness (puruṣārtha) but to gratify the ego, and we might name it the ahaṁkāric principle, or ahaṁkārārtha (ahamkāra + artha), "for the sake of the ego."

The next slide **[Slide 16]** summarizes all that we have said to this point.

Moments of life ($T_1 \ldots T_2 \ldots$, etc.) come into being successively, as earlier actions are followed by later ones ($K_1 \ldots K_2 \ldots$, etc.), all to some degree repeating the same error of trying to capture consciousness in the form of an observer (the ahaṁkāra) , which is actually part of the world; this is ahaṁkārārtha. In spite of this, however, each K still constitutes a somewhat new and free moment of agency.

The freedom in the system arises from the fact that, at each moment, reference is made to puruṣa whose service is an underlying aim (artha) for the action that would otherwise be completely determined by prakṛti's ahaṁkāric nature (satkārya). The height of each action (K_n) corresponds to its degree of conscious orientation towards its puruṣa, its degree of understanding of its inherent puruṣārtha-hood. Higher = more awareness (vidyā), lower = more ignorant, identifying puruṣa with ahaṁkāra , "the self as seen" (avidyā).

[Slide 17]

The insight that puruṣa is referenced at every instant, at least implicitly, corresponds at the level of devotional religion (bhakti) to the rasa-līlā (love play) between Lord Krishna and the cowgirls (gopīs) at Vṛṇḍavān shown in this very popular image. **[Slides 18 and 19].** The Gopis (cowgirl devotees of Lord Krishna) live two lives, the horizontal one of worldly marriage and all the sufferings that brings, and the vertical reference to the puruṣa, which for them is their

individual Krishna. As great yoginīs, the Gopis are able to stop the onward flow of "ahaṁkārārtha" life and "return to the source," the higher and earlier states of prakṛti that are imaged in the gardens of Vrindavan in the paintings. **[Slide 20]** This idea of return, flowing against the grain (pratiprasava), appears in the last verse of the Yoga Sūtra where it shows the ideal future of the person, when the psychomaterial world process has ceased, emptied itself, having fulfilled its purpose of pleasing and enlightening puruṣa. Now the power of consciousness (citi-śakti) can carry on, existing in its own innate reality.

puruṣārtha-śūnyānām guṅānām pratiprasavaḥ kaivalyam

svarūpapratiṣṭhā vā citiśaktir (YS 4.34).

Identity (kaivalya) is the flowing backwards of the guṇas which have emptied themselves for the sake of the puruṣa. Kaivalya is **also** the power of consciousness in its innate reality.

Prakṛti has become identical to puruṣa—and identity rather than aloneness is the true significance of kaivalya—śakti, formerly an attribute of prakṛti, is now part of puruṣa, and the action (śakti) of prakṛti is imbued with consciousness. **[Slide 20 a]** The whole future of tantra is implied in this verse. Prakṛti has come to a correct relationship with puruṣa and together this united pair can bring about a transformation of the world, as tantra teaches (I would include Aurobindo and Vivekananda).

[Slide 21]

Now we try to apply these insights to the problem of the observer in physics. As we saw, the observer "collapses the wave function" and brings about a subject-object intentional moment, which in the multiverse continually branches off into future worlds where every possibility is actualized. The branching results from a choice (to look into this or that cage to see whether the cat is alive or dead, for instance). We saw that the physical observer and the Yogic ahaṁkāra-based person are quite similar. Both include a subjective and an objective aspect within a single intentional event. In S/Y, this is due to the mysterious advent of māyā, "the self as seen," an illusion that can be overcome through yoga. Applying that possibility to physics, we imagine a world in which the observer's choice is seen through and the wave function does not collapse. Consequently, there would be no intentional moment. **[Slide 22]** Stephen Collins, a scholar of early Buddhism, has speculated on the question: If everybody achieved nirvāṇa, would the world come to an end? A similar question might be asked in Yoga. In physics, if we stopped intentionally "observing," would future states of the universe avoid the collapsing of the wave into definite subject-object events? Perhaps even reverse the collapse and return things to quantum superposition? Does pratiprasava apply in physics? If so, could a yogic science have the ability to change physical nature.

[Slide 23]

If it is possible to do physics under the aegis of the puruṣārthic principle, what would it be like? The answer must lie in the concept, articulated by Sri Aurobindo, of "knowledge by identity" as opposed to knowledge wrested violently from nature. If each experiment is oriented pratiprasava (in the direction of the primordial state called avyakta, "the unmanifest" or mūla-prakṛti, "root prakṛti"—when prakṛti was united with puruṣa without a subject-object

intentionality), science would take on an enlightenment- or salvation-oriented perspective, would flow rather than push to understand and control. At the heart of what the pre-collapse equations describe must lie consciousness itself, puruṣa, the seer of both cat and observer, and physics would realize that it works for the full self-manifestation of that consciousness. The second aim of prakṛti for puruṣa's sake would be equally practiced by science, which, like all action, would work for puruṣa's enjoyment. Science would become yoga. Its knowledge would not be acquired and possessed; rather lived, practiced, and shared with the universe.