A Sketch of Religious Roots

During the first millennium BC, across India, China, and Judea, tenacious and inventive thinkers re-examined ancient myths and ways of being, entailing among other developments what philosopher Karl Jaspers described as the "beginnings of the world religions, by which human beings still live" Scholars debate the degree of relatedness of these far-flung developments, but there is accord on the outcome. Religious Systems became increasingly organized as adherents set down stories, culled insights, and synthesized directives that, having been channelled through anointed prophets and passed orally from one generation to the next, had garnered a stamp of the ***sacred***. There is great variation in the content of the resulting texts, of course, but they hold in common a fascination with the very questions guiding our present day questions: Where did we come from? And where are we going?

Among the earliest surviving written records are the Vedas, a voluminous collection of verse, mantra, and prose composed in the language of Sanskrit, with portions that date from as far back as 1500 BC. Later, there are records of the Upanishads which are a rich body of commentary likely written sometime after the eighth century BC. Both the Vedas and Upanishads, found on the Indian subcontinent, constitutes the sacred texts of what would become the Hindu religion - now practiced by one in seven inhabitants of the earth, about 1.1 billion people. Gradually Hinduism established its classical form – the proliferations of temples, the worship of the great gods Vishnu and Shiva, seen as alternative ways of picturing the Supreme Being, the elaboration of the caste hierarchy and the acceptance of a belief in rebirth.

Before I was yet ten years old, I had a personal experience to these works. It was the late 1960s. Peace, love, and the Vietnam War were in the air as my father, sister, and I strolled on a bright sunny day through Central Park. We paused at the Naumburg Bandshell leading to Poet's Walk, where a large gathering of Hare Krishna devotees were energetically drumming, chanting, and dancing. One adherent, eyes bulging and tears streaming, was expressing an impassioned astral communion by pulsing to the beat while staring intently into the sun. Shockingly, at least for me, I suddenly realized that one of the drummers, outfitted in flowing robes and sporting a shaved head, save for a single tuft atop, was my brother. I thought he was away at college. The outing, apparently, was my father's way of introducing us to the new direction that my brother's life had taken. In the decades that followed, communication with my brother was episodic, but in each encounter the Vedas and Upanishads were circling nearby. It's hard to say whether my own interests were sparked by these encounters or whether the conversations naturally emerged from siblings approaching similar questions from widely different perspectives. It was surely enriching to learn of ancient and for me unfamiliar ruminations into cosmic origins: "There was neither non-existence nor existence then; there was neither the realm of space nor the sky which is beyond. What stirred? Where? In whose protection? Was there water bottomlessly deep ? There was neither death nor immortality then. There was no distinguishing sign of night, nor of day. That one breathed windless, by its own impulse. Other than that there was nothing beyond, I was moved by the universality of the human need to feel the rhythms of reality. But to my brother, the Vedas were more than that, they provided a grander vision of the cosmology that I was studying mathematically, As poetry, the words artfully capture the enigma of a beginning to the beginning. As metaphor, they speak to the perplexing nature of a time before time. As a meditation perhaps a communal immersion around a crackling fire enveloped by an awe-inspiring but utterly mysterious inky-black star-filled canopy, the lines convey the seeming paradox of how there can be a universe at all. But ancient hymns and verse, imaginative stories of the thousand-headed Purusha dismembered to create the sun, earth, and moon, as well as the many other evocative and lofty offerings, do not

account for the origin of the universe. The words reflect our pattern-seeking, explanation-craving, survival-attuned minds developing a vivid story to provide a symbolic framework for living - how we came to be, how we should behave, the consequences of our actions, and the nature of life and death. What became apparent to me through these sporadic fraternal brushes is that the Vedas seek something stable, some kind of constant quality underlying the shifting sands of familiar reality. It is a description that I, and many of my colleagues, would happily use in characterizing the charge of fundamental physics. The disciplines share a common urge to see beyond appearances available to everyday experience. Yet the nature of the explanations each discipline deems capable of advancing this charge are thoroughly distinct.

In the middle of the sixth century BC, Siddhartha Gautama was born in present-day Nepal among the people known as Sakya. Of princely birth he had been brought up studying the Vedas but became distraught as the life of luxury he'd been handed confronted the anguish endured by those leading a more common existence. As the famous story goes, Gautama decided to forgo privilege and wander the world in search of a way to alleviate the misery of human suffering. Finally after much solitude and mediation he attained enlightenment and a vision of the true nature of reality while seated beneath a tree, the so called Bo Tree in Northern India. He was given the title "Enlightened One" or Buddha. The resulting insights, developed and promulgated by his followers largely after his death, constitute Buddhism, and are now practiced by one in every dozen inhabitants of earth, about half a billion people. As Buddhist thought spread, numerous sects developed, but all share in the belief that perception is an illusory guide to reality. There are qualities of the world that may seem stable but, in truth, all things always change. Deviating from its Vedic origins, Buddhism denies that there is an immutable substrate underlying existence and attributes the root of human suffering to the failure of recognizing the impermanence of everything. The Buddha's teachings outline a way of life that promises an unvarnished, more clearly perceived view of truth, and as with the Vedas, the path to such enlightenment involves a series of rebirths, with the endgame seeking to conclude the cycles of reincarnation by reaching an eternal state of bliss, ***nirvana,*** that stands beyond desire, beyond suffering, and beyond self. If humanity's earlier imagining of realms where life continued beyond this life was a remarkable mental maneuver for addressing the enigma of mortality, the Hindu and Buddhist stances are more remarkable still. Death is re-imagined as a new beginning in a cyclical process whose very goal is an ultimate and permanent release from life. The conclusion of the cycles, once attained, leads to a dominion where the concept of distinct existence disappears. Our impermanence becomes a sacred rite of passage en route to the timeless.

Because Hinduism and Buddhism seek a reality beyond the illusions of everyday perception, a characterization that also describes many of the most surprising scientific advances of the last hundred years, a small industry has produced articles, books, and films that purport to establish links with modern physics. While one can find similarities in perspective and language, I have never encountered more than a metaphorical resonance between distinct ideas vaguely construed. Descriptions of modern physics provided in popularizations, mine as well as those of others, usually suppress mathematics in favor of more accessible accounts, but, unequivocally, mathematics is the anchor of the science. Words, however carefully chosen and crafted, are only a translation of the equations. Invoking such translations as the basis for contact with other disciplines will almost never rise above the level of a poetic alliance. This judgment is consonant with at least some of the spiritual disciplines' leading voices. Some years ago I was invited to participate in a public forum with the Dalai Lama. During the discussion, I noted the preponderance of books explaining how modern physics is recapitulating discoveries made in the Far East thousands of years ago, and I asked the Dalai Lama whether he

considered these claims valid. His forthright answer left a significant impression on me: “When it comes to consciousness, Buddhism has something important to say. But when it comes to material reality, we need to look to you and your colleagues, You are the ones penetrating deeply." I remember thinking, How wonderful to imagine religious and spiritual leaders worldwide following his simple, fearless, and honest example.

During roughly the same era that the Buddha was wandering in India, the Jewish people in the Kingdom of]udah were trounced by the Babylonians and forced into exile. In an effort to codify their identity, Jewish leaders gathered disparate written accounts and oversaw the transcription of oral histories, yielding early versions of the Hebrew Bible - a document that would continue to evolve and become a sacred text of the Abrahamic religions now practiced by more than one of every two inhabitants on earth about four billion people. The God of Judaism, Christianity, and Islam (Allah is the God of Islam) is the all-powerful, all-knowing, everywhere-present, singular creator of everything - a conception that, for many worldwide is the dominant image they conjure when there's talk, secular or sacred, of religion. The Old Testament tells its own widely known origin story. It takes six days, begins with the formation of the heavens and the earth and concludes with the creation of man and woman. Generation upon generation quickly follow, but the Old Testament is less than forthcoming regarding where protagonists go when they die. It is well documented that 10 Commandments were given to Moses by God and a covenant was made with his people. Save a couple of brief references to resurrection, there is no commitment to an afterlife. Jewish mystics and interpreters subsequently developed numerous ideas involving immortal souls awaiting another world, but there is no single interpretation that reconciles the myriad sources and commentaries. Half a millennium later, that uncertainty would be wiped away as Christianity developed a theological doctrine infused with eternal souls that maintain their identities well beyond their time on earth. Jesus Christ, Son of God, came to earth and the New Testament describes His life, death, resurrection and return to the Godhead. Christians believe that God came to earth to complete the covenant that He had made with the Jewish people and, by example, lived a life of love. Christians have strived to follow His teaching since that time.

Half a millennium beyond that, Islam would introduce its own extensive body of belief addressing similar themes, aligning with Christianity in its reverence for an approaching day of judgment when the dead would be raised and those deemed worthy would receive eternal heavenly reward while all others would endure eternal damnation. Mohammad was the founder of Islam and his writings are contained in the Quran. He is traditionally said to have been born in 570 in Mecca and to have died in 632 in Medina. In Mohammad’s lifetime the Islamic religion had a great unifying influence on the Arab world. However, a separation into two groups started after the death of the Prophet Muhammad. The majority believed that his rightful successor was his father-in-law and close friend, Abu Bakr, but a small group believed the Prophet Muhammad's successor should be Ali ibn Abi Talib, his cousin and son-in-law and father of his grandchildren.

The Sunni majority got their way, as Abu Bakr became the first Muslim caliph and successor of the prophet. Although the divide was at first mostly political, as the minority group was a faction supporting the power of Ali. Over time, the divide evolved into a religious movement called the Shiites. Both groups agree that Muhammad is God's messenger and follow the five ritualistic pillars of Islam, which include fasting during Ramadan, five daily prayers, and the Hajj, an annual pilgrimage to Mecca. They also both share the holy book of the Quran. The primary difference in practice comes in that Sunni Muslims mainly rely on the Sunnah, a record of the teachings and sayings of the Prophet

Muhammad to guide their actions while the Shiites follow the teachings of their ayatollahs, whom they see as a sign of God on earth.

The handful of religions that have been briefly surveyed above are collectively followed by more than three out of every four inhabitants of planet earth. With billions of adherents, the nature and style of religious engagement varies considerably and, if we include the more-than four thousand smaller religions currently practiced around the world, the range of commitments and the specifics of doctrinal content broaden yet more widely. Even so, there are common qualities, such as exalted figures who have seen further or been granted access to stories that purport to explain how it all began, how it will all end, where we will all go, and how best to get there. Deeper still is a prevalent expectation that adherents will assume a sacred mind-set. The world is full of stories that can inform us how we live; the world is full of pronouncements that can guide how we behave; those stories and pronouncements that are bound into religious doctrines are elevated above all others because in the mind of the faithful they elicit some variety of ***belief.***