

Article

# Exploration of Religious Traditions through the Lens of Entropy

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## Abstract

In this article, I start by asking whether the entropy metaphor could shed a kind of integrative light on the diversity of religious traditions – This will lead to new questions, one of which is whether something so vast as a religious tradition can meaningfully be reduced to a set of principles (i.e., ordered) in the first place. Does the very attempt to order what is inherently not subject to order increase the amount disorder in the universe? Is order with respect to matters of the spirit hopelessly caught up with human subjectivity? Finally, are such questions, no matter how challenging, the spark to new levels of creativity, to ecumenical visions of order that can scarcely yet be imagined?

**Keywords:** Religious tradition, diversity, entropy, order, disorder, energy.

## 1. Introduction

What light can the second law of thermodynamics, associated with the idea of entropy, shed on the phenomenon of religious differentiation? In a rough sense, entropy may be associated with the manner in which the particles making up a gas, in some closed system, display a tendency to increasing ‘disorder’, where there is a movement away from a condition of relative concentration associated with heat to a condition of relative diffusion associated with coolness. If the system were not closed, some source of energy could be ‘piped in’ to counter-act the entropic tendency and keep the entropy accordingly low. (Rifkin, p. 35) In other words, low heat and extensive diffusion are associated with a high degree of entropy while high heat and a statistically improbable concentration of particles are associated with low level of entropy. What follows from this diffusion is a declining capacity to tap into and effectively utilize the energy of the system. It is harder to make use of or harness energy that is in a state of relative diffusion. In this regard, the second law of thermodynamics states that entropy (as the tendency to diffusion or disorder) is always on the increase while at a local level entropy may be declining. (Rifkin, p.36)

Religious diversity may be understood in terms of the fundamental assumption sets that allow one to distinguish major religious traditions from each another, but it is not the goal of this discussion to associate this diversity with entropy – as if some kind of diffusion from a hypothesized common proto-religion were, in and of itself, a measure of entropy. Instead, I seek to show how each of the major traditions may be understood as a kind of

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‘entropy-reduction’ system, and then use that categorical perspective to put forward a kind of integrative framework whereby the differing traditions may be seen as variations on an underlying theme.

In a broad and general manner, religion plays an integrative role in culture, that is, it serves to bind people together. Such binding is akin to overcoming the dis-integrative tendencies identified by Hobbes (in his *Leviathan*) as a war of all against all. In seeking their self-interest at the expense of others, individuals (according to Hobbes) have lives that are nasty, brutish, and short. While Hobbes developed a theory of political integration that saw reason as a key binding agent, this essay will examine how the more ‘trans-rational’ phenomenon of religion functions in this manner using the complex of ideas associated with entropy as a guide. (By ‘trans-rational’ I mean a way of binding that uses myth, intuition, feeling as well as reason.)

Just what are these ideas? They are as follows: (1) efficient energy deployment, (2) degree of waste, and (3) the nature of the ordering mechanism that deploys the energy and is responsible for the waste. Each of the aforementioned has associations with physical reality in the context of an increase in entropy, which is a fundamental principle of the second law of thermodynamics. What is of interest, from the perspective of developing an integrative framework for the comparison of different religious traditions, is that these physical categories also resonate with the way religions may be said to function within human culture if we think of energy as the ability to do work – more specifically, the work associated with a particular culture and its ability to mobilize its human resources in a manner that reduces what might be termed the waste of human ‘friction’ or inter-personal conflict. The ordering mechanism is not just the political laws or social customs, but also the religious values that infuse them to the extent that these values inspire people (in a way that political laws and social customs do not). Human energy can be effectively directed to the achievement of more positive goals aside from minimizing the friction associated with conflicting human interests. An example of such inspirational mobilization may be seen in the rapid – almost inflationary – expansion of Islam during and shortly after the life of the prophet.

Just as the entropy process may be understood within a framework that is either open or closed to sources of energy infusion from elsewhere, differing religious traditions may also be understood as bounded entities that have some kind of open or closed relationship to other traditions (usually a closed one) or to a transcendent creative power (usually an open one). This idea actually follows from the previous ones (given above). Here, the ordering principle or mechanism of a given religion may be thought of as a set of dogmas or rituals or myths that define its ‘boundary’. ‘Openness’, even with respect to a divine creative energy or power, must be a matter of degree and can evolve along with the religious tradition. Likewise, ‘closedness’ with respect to alien or complementary religious outlooks may also be subject to evolution.

While entropy as a physical principle was discovered in the 19<sup>th</sup> century, the great religious traditions associated with Judaism, Christianity, Islam, Hinduism, Buddhism, Confucianism, and Taoism, go back much farther and may have been instrumental in maintaining higher levels of social order than those which were available to more tribally based human communities. It is not without interest that the 19<sup>th</sup> century, which saw the growth of a more rational, scientifically based social order in the West, would discover entropy in its more physical manifestation just as its more religious manifestations were beginning to decline in Europe. Yet the need for maintaining a ‘low-entropy system’ in the social sphere has not disappeared. Neither has organized religion. Much may be learned from how the great religious traditions kept ‘social entropy’ low or how they might have failed to do so. If the entropy metaphor can shed light on this phenomenon of human culture, we might begin to gain a greater sense of how the major religious traditions may be inter-related and even how our more secular society functions as a kind of religion. Beyond that, the deeper implications of this kind of discussion point toward an integration of science and spirituality insofar as entropy, taken in a more general sense than its ‘physicalist’ origins might warrant, could function as a kind of binding agent for sectarian ways of thinking that far too often seem to be at odds with each other.

## 2. Methodological Considerations

While it might seem the height of presumption to seek to integrate major world religions in an extended monograph, let alone a scholarly article, the application of entropy ideas to the phenomenon of organized religion allows for the articulation of some preliminary insights. To keep the material under some measure of control, my presentation will be in the form of comparisons between major religious traditions (sketched out, of course, in the broadest of strokes). The traditions to be compared with respect to entropy principles are: Judaism-Daoism, Christianity-Confucianism, and Islam-Buddhism. The last great tradition – that of Hinduism – does not have a comparative mate, but will be discussed with reference to the preceding frameworks as that which manifests a maximal efficiency from a social-entropy perspective.

The foregoing comparisons may seem quite strange, for the traditions being juxtaposed appear at first glance to have little in common with each other. However, from an entropy perspective, they resonate with each other in unexpected ways – ways that bespeak a greater unity where none was hitherto thought to exist. Of course, not all religions have been brought within the framework being developed in this essay. Notably absent are what might be called animist or aboriginal religions as well as the affirmation of a rationalist materialism that, while denying itself to be any kind of religion, nonetheless may be said to function as a kind of faith for those committed to the sciences as a way of organizing the world. Like other ‘faiths’, that of scientific materialism displays a noted hostility toward its rivals, which in this case are the religions being discussed in this essay. In any case, since most of humanity has lived and to

some extent continues to live under the aegis of these great religious traditions and since much cultural conflict may be associated with an inability to develop an acceptable basis for understanding how these traditions may be related to each other, the integrative project being undertaken in the following pages may be of no small value despite the high level of generality that will characterize my analysis.

Not being a scientist myself, I cannot deny that I am using entropy in a somewhat metaphorical sense. However, why should one jump to the conclusion that terms which were developed to account for certain physical phenomena have no relevance to or cannot be successfully adapted to cultural realities and *vice versa*? The proof of their value will be, as they say, in the pudding.

My way of proceeding, then, is to subject each pair of religious traditions to the question of their entropy level. That is, each pair of traditions will be examined in a comparative manner with the others to show how entropy moves from a high level to ever lower ones. An examination of methods or what might be called entropy-reduction strategies will go hand in hand with a discussion of the kind of order established in each religious tradition. Following this I will examine how 'open' or 'closed' each religion may be with respect to a higher or transcendent energy source.

However, to simplify matters, one may think of two axes: a 'Y' axis which goes from high to low entropy and an 'X' axis which goes from 'closed' to 'open' with respect to energy sources which are foundational, transcendent, and/or generative of all that exists. High entropy is close to the origin because it is indicative of disorder, inefficiency, and/or a limited ability to mobilize masses into large agglomerations. By contrast, low entropy is indicative of order, efficiency, and/or a noted capacity to organize masses into a way of life that reduces conflict within the framework of a meaningful common purpose. In this regard, one must think of a common purpose that has what one might call 'mass' appeal. If the purpose is such that entropy is reduced for only a relatively small number, then the religion must be placed on the high entropy spot on our Y axis (i.e., near the origin because high entropy is ultimately associated with a limited or low ordering capacity). Thus, while waste or social friction might be limited in some traditions, entropy is nonetheless high if this waste reduction is purchased at the cost of a limited capacity to mobilize masses within the framework of a common culture or if antagonistic forces are set in motion and create chaos or disorder by mounting an attack on that religiously defined culture.

As for the X axis, a closed tradition is one that has strict boundaries with respect to a transcendent or divine energy and is thus near the origin. As one might surmise, the increased flow of such energy may be utilized for expansive purposes, and this indeed might be part of the meaningful work of the culture – to mobilize ever more people under the aegis of that religious tradition by way of a combination of conquest and conversion. Yet, if openness becomes too

extreme and the boundary between the transcendent energy and the culture too porous, the energy might be ‘un-mobilizable’ and the work of the culture be accordingly minimized or attenuated in such a manner that the number of people living within the framework of that tradition is reduced relative to the greater mobilizing capacities of other traditions.

My ultimate goal is to see if there is an emergent pattern that encompasses, in an integrative way, the basic principles of each of the major religious traditions of humankind. The first part of my tentative hypothesis, pertaining to entropy per se, makes the claim that entropy decreases from a relative high level in the Judaism-Daoism pair, declines in the Christianity-Confucianism pair, is further reduced in the Islam-Buddhism pair, and reaches a relative minimum in Hinduism. While the latter tradition might be at a maximum in terms of waste reduction and mobilization of masses might be high, Christianity and Islam with higher mobilization would still manifest a greater degree of entropy compared to Hinduism by way of an increase in the amount of social and inter-cultural friction. The second part of my hypothesis, pertaining to openness and closedness is that levels of openness go from a minimum in Judaism and increase respectively with Christianity, Islam, Hinduism, Confucianism, and Daoism, which is at a relative maximum.

I will proceed by broadly sketching out entropy levels with respect to the following religious traditions: Judaism-Daoism, Christianity-Confucianism, Islam-Buddhism, and an ‘unpaired’ Hinduism. The subsequent step is to outline increasing levels of openness to transcendent energy sources from Judaism (at a low level of openness) to Christianity, to Islam, to Hinduism, to Buddhism, to Confucianism, to Daoism (at a high level of openness). My conclusion will return to the entropy theme with a discussion of how differing religious traditions may be understood as responses to the arrow of time, which is an encapsulating metaphor for the temporal trajectory of the entropy process from the order of mobilizable energy to the disorder of un-mobilizable energy.

### **3. Judaism and Daoism: High Entropy**

How may entropy be understood in the contexts of Judaism and Daoism? Despite their radical differences both historically and geographically, these two religious traditions share a common entropic quality – that of wandering, where wandering is a kind of disorderliness in relation to lower entropy states of a more structured and stable way of life. Thus, the energy of each culture is directed more to adaptation to the ever-shifting circumstances of history and nature rather than to mobilizing masses within the context of a highly organized cultural configuration. Moreover, the energy expended in this process is not inconsiderable since rest or inaction become intrinsic elements of each tradition as each endeavors to conserve its energetic resources.

While all religions have a set of laws or principles that may be said to define their respective

identities, Judaism goes beyond that in situating its principles in the context of a narrative or story – a story of exile and return (Prothero, pp. 253-257). Does the exile start with the expulsion of Adam and Eve from the Garden of Eden (*Genesis*)? If low or minimal entropy can be identified with a mythical place of absolute order, then Eden would be a good candidate for such a location. Expulsion, then, may be thought of as a fall into a high entropy condition of hard work, pain, and, of course, death – the ultimate dissolution. The story of exile or fall into a kind of wandering state is repeated endlessly in the *Old Testament (Tanakh)* and even throughout history (e.g., the expulsion of Jews from 15<sup>th</sup>-century Spain), and the notion of diaspora (the scattering of the Jewish people throughout the world) conjures up the high entropy image of a gas in a diffuse state.

The narrative theme behind this exile is centered on disobedience to God's will or law. Disregarding God's injunction to not eat of the tree of knowledge of good and evil in the Garden of Eden may have been the occasion for expulsion from a low to a high entropy state. Then, after many more exile-return episodes, the Jews (still in the process of forming their identity) are taken into their 'Babylonian captivity' after their temple is destroyed. Here the idea of disobedience is developed in terms of what the prophets saw as a failure to live up to the ethical injunctions of God – the failure to look after the poor, the widows, the orphans, the disadvantaged and to focus instead on sterile temple ceremonies. Thus, exile is a kind of punishment for a failure to reduce the high entropy disorder inherent in social suffering, and an antidote is to remember the suffering of one's ancestors who were slaves in Egypt and wandered in the wilderness for forty years on their way to the promised land.

In the context of a return to the promised land after the flight from Egypt, the proto- Jews (at a much earlier stage of identity formation) receive a set of laws, via Moses, from God on Mount Sinai. These ten commandments are the core of a much larger corpus (i.e., *Mishnah, Talmud*) that seems to bespeak an entropy reducing structure. Yet here again high entropy is not absent inasmuch as these laws are not learned in a slavish or passive manner, but in a context of debate and passionate engagement (Prothero, pp.248-249). Indeed, the key texts are themselves not models of low entropy logical exposition. Prothero describes the *Talmud* in a way that emphasizes its high entropy character: "A vast tangle of various lines of argumentation, its two and a half million words don't just contain contradictions; they are designed around them, with a passage at the center of each page literally surrounded by competing interpretations." (p. 249) He goes on to say that "Jews are trained not to abide ambiguity but to glory in it." (p. 250)

With respect to Daoism, the theme of wandering is central to the life of the Daoist sage who is in exile from the stifling, artificial and life-destroying conventions of society. To where does the sage seek to return? The simple answer is the Dao itself – the way of nature which is characterized by spontaneous change. Harmony with nature is not a once and for all condition. It entails an ongoing adaptation to Nature understood as that which cannot really be understood,

but which infuses all things including ourselves. If language in the context of clear and unambiguous communication reflects a minimal level of entropy, the Dao (sometimes spelled Tao) is inherently resistant to such reduction. In this regard, the first lines of Lao Tsu's (sometimes spelled Lao Tzu) classic *Tao Te Ching* illustrate the high entropy nature of both the term and that to which it refers: "The Tao that can be told is not the eternal Tao. The name that has been named is not the eternal name." (First Verse, non-paginated edition)

If the promised land for the Daoists is Nature itself, understood in its high entropy ever shifting ineffability, the danger of a return is a fall into stagnation – the belief that one has returned when one has in fact lost 'the way'. Just as the Israelites lost their way when their return to the promised land was undermined or betrayed by a loss of their ethical bearings – a loss to which the prophets drew attention – a fall into routine, a compulsive worship of Daoist gods, or a superstitious engagement with rituals that become ends in themselves are all dangers that beset this tradition. More adherents might be drawn to this kind of 'diluted' Daoism, but the high entropy essence of the wandering, ever-adapting, free individual has been lost. In other words, the energy expended in the never-ending task of constant and authentic adaptation to the way of nature can hardly be deployed to mobilize masses in a low entropy manner.

Given the subtlety of adaptation to what can hardly be grasped in any objective sense, a key strategy in this process is that of *wu wei* or doing nothing: "Therefore the sage goes about doing nothing ..." (Second verse) But that does not mean that nothing is accomplished; for doing nothing may be the most appropriate stance to take when a natural process is unfolding, and one must stand aside in order to take the benefit of it. Energy is accordingly conserved by respecting a high entropy process rather than getting drained by attempting to control it.

What is of interest in the foregoing description of *wu wei* is its resonance with the Hebrew idea of the Sabbath, a weekly commemoration of the day of rest when God did 'nothing' after six days of energy expenditure directed to the creation of the world. Just as *wu wei* is a paradoxical and high entropy way of harnessing energy, the Jewish reflection on the creation, on the meaning of work and its relation to non-work is doing something – a turning from the external world of activity to the internal world of the spirit which has its own 'way' of emergence. This is a way that transcends the sphere of human activity just as the way of nature can better manifest itself when one is taking the action of non-action.

A final point that ties together these two high-entropy albeit disparate traditions is their place on the edge of the more low entropy cultural configurations such as Confucian China and the larger empires that assailed, absorbed, and/or expelled the Jews. This edge-like quality is exemplified in the famous legend of how the *Tao Te Ching* was written. Lao Tsu was leaving the kingdom; and when he reached the western boundary, a border guard prevailed upon him to leave a record of his wisdom. After spending a few days writing his celebrated text, he mounted his ox, headed

west and was never heard from again. Likewise, were not the texts of rabbinic Judaism written in Babylon, on the eastern edge of the promised land? Yet this edge quality is more than a matter of space. It is a matter of high entropy always being at the edge of the more low entropy forms of social organization that characterize the ‘center’. One pays for lowering entropy by losing something of value: a liberating closeness to Nature in the case of the Daoists, an ethical sensitivity in the case of those Jews who ignored the prophetic call to go beyond the letter of the law and return to its spirit.

#### **4. Christianity and Confucianism: Entropy Reduction**

Just as Judaism and Daoism appear disparate until entropy metaphors are brought into play, so do Christianity and Confucianism. If the two latter traditions both display a significant reduction in entropy with respect to the former pair and we have limited quantitative data to establish this, then we must turn to qualitative criteria to make our point. What give Christianity and Confucianism a certain ‘mass appeal’ that would bring multitudes within their respective ambits? I would say each has a certain organizational potential beyond that of Judaism and Daoism; and when that potential is actualized by some authoritative body, large numbers become adherents and a culture of significant scope develops a Christian or Confucian identity. When a large culture becomes more integrated, then the principles of that integration may be said to be entropy reducing.

With respect to Christianity, several integrative factors present themselves: (1) personal salvation in the context of an eternal (i.e., anti-entropic) relationship with a heavenly father-creator; (2) a strong division between those who attain this relationship and those who fail to do so (i.e., between good and evil); (3) a viable mechanism (i.e., the sacrifice of a sinless Christ) for achieving this anti-entropic relationship with the father-creator; (4) a strong focus on love as a that which characterizes the integrative principle of this tradition and brings one close to the loving father while keeping individualized souls or centers of consciousness from falling into high entropy disorder. A need for brevity precludes the possibility of listing other entropy-reducing integrative factors, but a Christian emphasis on the perfect order of heaven as the mark of personal salvation bespeaks a noted reduction in entropy in comparison with the Judaic narrative of ongoing exile and return. Moreover, the idea that the locus of God’s kingdom is internal (i.e., ‘within’) clearly sets it off from the more entropic locus of the exile and return narrative – a narrative taking place in the ‘external’ world of dissolution and death.

In a similar vein the essence of Confucianism is a quest for order that eschews Daoist wandering with its more entropic spontaneity. The following characteristics illustrate this claim: (1) a focus on the natural ordering principle of the family, not only in terms of personal relationships (e.g., father-son, husband-wife, elder-younger brother), but also in terms of more trans-personal



ones (e.g., emperor-subject); (2) love (i.e., *ren*) as an integrative binding agent; (3) rites, etiquette and the like (i.e., *li*) as an aesthetic way or organizing human behavior and moving it from the more entropic spontaneity of Daoism; (4) self-cultivation via the discipline of learning; and (5) a common set of classic texts, mastery of which authorizes learned individuals to take up positions of leadership in society.

Both of the foregoing traditions extend their mass appeal by a strategy of integrative openness. Thus, the apostle Paul opens the scope of Christianity to all who have faith in Jesus' loving sacrifice on the cross and accordingly transforms Christianity from a Jewish sect to a world religion. And while Confucianism is confined to China and its immediately surrounding lands, it is open to all who are willing to subject themselves to a regimen of learning and rites and the state-sponsored examinations designed to select those who are most worthy of a leadership role. While Christian order is based on an other-worldly heaven, monasteries allow entropy reducing structures (e.g., Benedict's 'rule') to function on an earthly plane. Heaven plays a different role in the Confucian world inasmuch as a successful emperor rules by having the 'mandate of heaven', that is, his decisions are in accord with the universal energy that underlies and sustains all things.

Mass appeal defines the range of each tradition; but for an extended range to be effective there has to be a strong ordering principle lest the society degenerate or dissolve into a kind of high entropy diffuse 'gas' of competing self-interested individuals. What Christianity and Confucianism have in common in this regard is an entropy-reducing strategy of developing an enhanced sense of self-hood that is internally controlled or disciplined. Instead of a self that is externally controlled by a set of laws in Judaism or a self that is engaged in an endless dance with the Dao, the Christian and Confucian self has a more internal orientation that is harder to avoid than are the challenges of the external world. To the extent that each tradition is functioning effectively, the sense of self is accordingly strengthened and the entropy increasing potential (i.e., a clash of selves) of that development is suppressed.

To be more specific, the Christian self or soul is disciplined by a combination of guilt and gratitude – guilt over an almost inevitable failure to embody Jesus' ideal of love extended even to enemies; gratitude over Christ's sacrificial death to atone for that failure. Thus, a Christian identity is strengthened in terms of one's personal struggle to live out the law of love while it is at the same time disciplined by an internal sense of guilt and gratitude. Similarly, the Confucian self is both disciplined and strengthened by the task of learning the classics and living according to the family-based rites, rituals, and etiquette that define and control inter-personal relationships. The ostensibly external and artificial qualities of these rites are probably mitigated by their connection to the internal (i.e., emotional) bonds inherent in any family (e.g., filial piety or loving respect for one's own father) – something akin to the father-creator aspect of the Christian God with respect to human beings in general and to his 'son', Jesus, in particular.

As one might suspect, the entropy-reducing potential inherent in the disciplined self can be compromised by the individualism inherent in selfhood. Should this gain an upper hand social entropy can only be increased and new strategies for reduction need to be developed.

## 5. Islam and Buddhism: Low Entropy

What links together the seemingly disparate traditions of Islam and Buddhism is a common entropy-reduction strategy that emphasizes dis-empowering the individualized self albeit in radically different ways. If the self – often more strengthened than disciplined in its entropic potential – is the problem, then at least two solutions present themselves. Islam favors what might be called a co-ordination of selves in a more coherent community of believers. Buddhism questions the usefulness of the very idea of the self because, should it becomes an object of attachment, it facilitates the craving and the disorder that arises from a futile and pain-generating focus on what might satisfy that self. In both cases the individualized self has its entropic potential minimized in a way that challenges and goes beyond the Christian-Confucian strengthening.

With respect to Islam, the very name means submission. Submission of what? Of the wilful and misguided self that falsely believes it can live without God, that is, without aligning one's personal will to that of God, called Allah in Arabic. If submission were difficult to achieve before, it is because of a corruption of older messages from God – messages that were channeled through Hebrew prophets, but ultimately underwent an entropic process of corruption that caused their messages to be lost or clouded over. The Koran (or recitation) was then God's final word through God's final messenger, Mohammed. There can be no others since that would be an entropic invitation to confusion. Nor can Mohammed himself be thought of as God since that entails an entropic confusion of the human and the divine – a disorder afflicting Christians who erroneously claim Jesus to be divine while Moslems take him to be a human prophet.

Submission to the final and de-corrupted word of a totally transcendent God is only the first step in co-ordinating individuals and directing them away from a false focus on a self-dependent individuality. Co-ordination is also facilitated by a call to prayer five times per day – a call that brings people together in a shared experience and also takes them away from the peace-destroying and inevitable conflicts that characterize daily life. Islam also addresses one of the key causes of conflict, that is, economic inequality, by requiring Moslems to give a certain percentage of their assets to charity (i.e., *zakat*). A more dramatic example of co-ordination is requirement that every Moslem (if capable) go on a pilgrimage to Mecca at least one in his/her life. Here Moslems from all over the world are brought together in a common enterprise that links them to the foundation of their faith.

At a perhaps more subtle level, the idea of recitation (the meaning of the word, Koran) co-ordinates in a way that the Bible does not. For 'reciting' is a speech act that generates a community focused on the only authentic language by which the Koran can be expressed, which is the actual language of its transmission, i.e., Arabic. While the Koran can, of course, be translated, such derivations are in no way a substitute for the 'orality' of the original recitation. In other words, the Koran appeals to the shared experience of the ear more than does the Bible, which, in its equally valid translations, appeals to the private vision of the eye in the many languages and cultures that refract its meaning in a relatively entropic manner. Indeed, committing the Koranic text to memory in its original language is highly valued (Prothero, p. 41), and may be understood in terms of its co-ordination function inasmuch as selves with a common memory are brought into a more harmonious relationship with each other than are those who are entropically differentiated by way of disparate memories.

Entropy reduction in Islam is connected with memory in a more crucial way by emphasizing that the harmonious co-ordination of selves is a matter of remembering one's natural dependence on God (Prothero, p. 43) – a dependence that pride makes us forget. If one remembered what the Koran deems as obvious, the 'one' would merge naturally into the 'many' who together remember that dependence and find therein the peace that will be perfected in heaven – a place where entropy is minimized and is promised to all who have submitted to God's will. Hell, by contrast, is the place to which all the prideful have been consigned and is also a place where entropy may be said to be maximized in the form of endless pain and suffering. Thus Islam lowers entropy in a more direct manner than what is achieved in the Judaeo-Christian tradition, where the 'commemoration' of the crucial events (e.g., the Passover, the last supper) of the great Biblical narrative is more symbolic and abstract. By this I mean Islam tackles directly the source of a discordant individuality by going beyond commemoration and replacing a personal forgetfulness based on pride with a common memory of joint dependence on God.

In a way the Islamic strategy of co-ordination of selves by memory restoration resonates with Freudian psychoanalysis, which seeks to order dysfunctional and what may be called entropically neurotic behavior by restoring those memories that, in their repression, are responsible for a life where human will is hampered by its repression-based defensiveness. When those memories are brought back into consciousness, the neurotic individual can attain a new measure of freedom. In other words, entropy has been reduced and personal energy can be deployed in a more effective manner. Islam, in a similar manner, witnessed a notable deployment of energy as it rapidly expanded during and after Mohammed's lifetime. Does that mean the memory restored by the Koran is a true one? Answering that question is beyond the scope of this discussion; but one cannot deny that increased and more effective energy deployment did occur by way of the Islamic strategy of co-ordination of selves.

Buddhism, for its part, would challenge this entropy reduction strategy as fundamentally flawed, and it would be useful to outline its key differences from Islam before we illustrate how its own entropy reduction strategy is nonetheless in line with that of Islam. To begin, the fundamental goal of Buddhism is not to submit to the will of God because God does not really exist for Buddhists. The goal is to escape from suffering, which is based on a desire-based attachment to that which is essentially insubstantial. The cessation from suffering is experienced as bliss or Nirvana and it is far from the physically pleasurable heaven of Islam where all desires are ostensibly fulfilled in a concrete manner (i.e., the endless satisfaction of physical desires). Enlightenment replaces heaven as the goal of Buddhism, and this may be understood as a subtle kind of awareness that undermines the possibility of desire in and of itself.

The nature of this awareness is not easy to understand, and this stands in contrast to the relatively clear vision of Islam, which emphasizes remembering one's inherent dependence on God and using that memory to dampen down a sense of self characterized by a pride. The isolated prideful self is thus the root of conflict and hence suffering. Buddhist awareness requires breaking down habits of thought that are not in and of themselves evil, but have consequences of attachment that inevitably lead to suffering. The prideful self in Buddhism would not be tackled by affirming some dependence on a non-existent God, but would be challenged by asserting that the self does not really exist. It is an illusion based on a reification of ever-shifting experiences that we organize into the false view of a subsisting self. Indeed, daily existence is just as fleeting and insubstantial as the self. The term used to describe this situation is 'emptiness', but this is not to be taken as a form of nihilism. It is more of a recognition that no thing (i.e., no particular substance) has self-dependent existence. Things exist only in relation to each other, in an endless chain of cause and effect, and it is but an illusion-generating trick of language and metaphysical speculation that causes the yet-to-be enlightened to take specific phenomena or certain ideas as foundational in an absolute sense (Abe, pp. 114-120).

The foregoing sketch appears to show Buddhism functioning very differently from Islam until we apply the insights of entropy theory and ask how the former reduces disorder in a way that aligns with the latter. At the same time we must also show entropy reduction in Buddhism goes beyond that of Confucianism (just as we illustrated how Islam went beyond Christianity in terms of entropy reduction).

What Buddhism has in common with Islam is an undermining of the independent self or soul, both of which are reinforced in Christianity and Confucianism. With Buddhism the self is not co-ordinated with other selves (as is the case with Islam), but it is important to note that such co-ordination does weaken the independent self and the entropy increase that comes with such independence. The Buddhist emphasis on the non-existence of the self cannot help but weaken the entropic war between well-defined selves or those suffering from the illusion of having

well-defined selves and being accordingly attached to them. The question then is how the Buddhist awareness of emptiness and no-self contribute to a lowering of entropy; for it would appear that the flow of experience, when not structured by appropriate categorization, must be inherently chaotic and thus be the occasion for entropy increase.

Living within or being an unthinking part of the chaotic flow of experience might be considered entropic when viewed from the outside, but taken for granted and seen as part of an ordered form of life simply because the one who lives it is so used to it and cannot think outside of the chaotic box of everyday life. Worse is the illusion that one has the power to escape or limit real or potential disorders by an act of will – an act of will that must be grounded in a self that directs that will by making some kind of choice.

The point of Buddhism in this regard is twofold. First of all, by an awareness that one cannot stop the chaotic flow, one can gain an entropy-lowering saving of energy that is no longer directed to such a futile endeavor. Secondly, if entropy reduction may be associated with a kind of peace of mind that suppresses inter-personal conflict, then Buddhism moves in the direction of liberating one from that source of disorder to the extent that such conflict is based on the false hope that life can be ordered by victory in some kind of competition for wealth and/or power. I say ‘moves’ rather than ‘arrives’ because the peace of mind is not easy to understand, let alone achieve. Chances of moving beyond a mind in fragmented ‘pieces’ are radically improved if one lives within a community of monks or nuns who can support each other in attaining the lowering of entropy associated with a higher level of awareness. Moreover, that community functions as a guide for those who are struggling within the high entropy framework of daily life, but realize that there is another way and the monks and nuns are a sign that a Buddhist lowering of entropy is a viable possibility.

Finally, just as Islam lowers entropy with respect to the Judaeo-Christian tradition, Buddhism does the same with respect to the Confucian way of life. Self-cultivation via learning the classics and the practice of rites may be a source of order, but it is purchased at the cost of strengthening the individual and maintaining the illusion of a world that is ‘orderable’. To the extent that attachments to that orderable world are fostered, disorder invariably ensues as is seen in the fall of dynasties, whose last emperors have lost the mandate of heaven. Try as they might, imperial historians of the subsequent dynasty can never gain a sense of the pattern of history which will prevent a repetition of some future dynastic collapse. Is the expenditure of energy in the interest of Confucian order worth it? Is there a better use of that energy? To the extent that some individuals are freed from the suffering attendant upon dynastic collapse and the ensuing wars, to the extent that the suffering associated with rigorous discipline is replaced by the bliss of Nirvana, to the extent that illusion-maintenance is replaced by an open and pragmatic realism, to that extent is Buddhism a greater reducer of entropy than is Confucianism.

## 6. Hinduism: Minimal Entropy

At first glance, Hinduism seems to be a very high entropy religious tradition. For not only does it include a multitude of gods, there is no single founder or shared creed (Prothero, p. 134). Yet its very broadness allows it to be encompassing of many strains of belief in a manner that low entropy religions like Islam and Buddhism are not. The broadness is not bereft of structure in the minimal entropy sense that there is nothing outside of or external to it. For example, Islam has no place for unbelievers (i.e., infidels) except the high entropy hell of endless pain and suffering, and that is a clear limit on its entropy-reducing co-ordination of souls. Likewise, with respect to Buddhism, those who have not attained the level of consciousness known as enlightenment (because they have been unable to put aside their craving) are in a different kind of hell – that associated with the earthly suffering of sickness, old age, and death.

To understand the minimal entropy of Hinduism, one must show that its manner of ordering all things is so complete that it leaves nothing outside of itself and is a perfect ‘re-cycler’ of what other traditions would deem ‘waste’. To put it another way, human friction is minimized by way of the all-pervasive structure of Hinduism that places human conflict within the framework of an all-encompassing structure.

The principles of Hindu minimal-entropy ordering are as follows: (1) the goal of life is to escape life (*samsara*) as an endless series of reincarnations; (2) escape is called release (*moksha*) and can only be achieved by those who are not caught up with lesser life goals – those of sensual pleasure (*kama*), wealth (*artha*), and duty (*dharma*); (3) as one goes from life to life, there is a low-entropy structure to the journey; and it is associated with the actions characterizing a given life (i.e., karma) generating in an orderly fashion the positive or negative conditions of the subsequent life; (4) as one’s action or karma is in line with one’s duty and bespeaks a moral responsibility, one can move up the caste hierarchy to a higher form of life that is poised for the possibility of release from the cycle of lives; (5) the caste hierarchy is a low entropy structure (priest, warrior, merchant, laborer) that encompasses all social conditions; (6) in addition to moving up the caste hierarchy, other ways of escaping the cycle are available – namely the ways of ritual, wisdom, ascetic practice, and devotion to a god; (7) the destination to which one is seeking to escape can have many forms: from the concrete paradise reminiscent of the Islamic heaven to the bliss associated with Buddhist Nirvana; (8) Hinduism allows for the trajectory of certain lives to be structured around a phase devoted to escape after one’s other duties (e.g., head of a household) have been fulfilled; (9) the core insight associated with escape and liberation from the cycle of lives is the realization that one’s inner self (*Atman*) is one with the universal creative force underlying all creation (*Brahman*); (10) a corollary of the foregoing insight is that the separation of all things is an illusion (*maya*).

There is more to this minimal entropy system, which does not end with the cessation of

soul-recycling, for Brahman itself is endlessly recycled as it manifests itself in different phases of evolution from low to high entropy (i.e., ages of massive corruption). In other words, no matter how many souls realize their oneness with Brahman and escape thereby the illusions of *samsara*, Brahman will endlessly recycle itself as it manifests itself in new universes, the death of which in high-entropy corruption is succeeded in a rebirth characterized by minimal-entropy perfection. The only outlook that comes close to this might be that of modern science, if – and it is a big ‘if’ – the big bang emergence of the universe from a singularity of infinitely concentrated energy is succeeded by a big crunch whereby gravity will overcome the accelerating force of expansion and bring the universe together again in new singularity. The key difference between the two visions is that the Hindu one has a measure of creative intelligence at the outset while consciousness is a more or less an accidental by-product of the big bang.

If there is a place where this minimal entropy is given expression, it would have in a small section of the great Hindu epic, *The Mahabharata*. This section is called the *Bhagavad Gita*, and it summarizes how high entropy can be felt as one has to engage in battle with one’s own kin. Can there be a clearer way of understanding social breakdown, of the soul’s internal conflict with respect to duty and the moral injunction not to kill? The individual, Arjuna, who is surveying the field of the impending battle between factions of one family, is thus overcome with grief and tells the driver of this chariot that he does not wish to fight. The driver of his chariot, however, is the god Krishna, and the deity lays out the principles that some say lie at the heart of Hinduism (Prothero, p. 161). First, one cannot really kill since the soul of the one who has fallen in battle will be reborn. Secondly, Arjuna must do his caste duty, which is that of fighting, but in such a manner that he is not attached to the result of his action. In other words, the dimensions of the minimal entropy system are laid out in both an internal and external aspects. If the soul represents the internal side of the system, one can see that it is not ‘wasted’ or lost in death, but merely travels to another body. If caste duty represents the external side of the system, then the order of society is maintained if duty is pursued for the good of a greater social coherence.

One might conclude this section by asking if the minimal entropy within Hinduism entails greater happiness than that of other religious traditions. But greater order does not necessarily mean greater happiness. The low-caste individual might not do his/her duty with good grace and accordingly turn to Islam or Buddhism rather than suffer whatever comes with that duty. But from the point of view of Hinduism that hardly matters since the life-death cycle will unfold via the laws of karma in any case. It is for those who find happiness in such an all-pervasive minimal-entropy order that Hinduism will maintain its appeal. As we have seen in high-entropy Judaism and Daoism, wandering has its pay-off (i.e., freedom) even if the wandering is not between lives.

## 7. The Spectrum of Religious Traditions in Terms of Closedness and Openness to Transcendent Energy

To understand openness and closedness, one has to imagine each tradition as a set of rules and principles that defines its relationship to a transcendent and foundational source of energy. The source may be thought of as God, Nature, Creative Intelligence, but it is usually beyond words or the capacities of humans to fully grasp it. In entropy theory as applied to society, openness to a higher energy source can help to sustain a religious community; and while some degree of openness is essential, the degree can vary. It is by way of that degree that we have another tool to interrelate our seven religious traditions.

It must be emphasized at this point that I am not making any value judgement with respect to a particular tradition by noting its level of openness. My goal, as stated before, is to reveal patterns that come to the fore via this aspect of entropy theory, and the pattern that I will be demonstrating in this section of my discussion places each of the seven traditions along a spectrum (X axis) going from minimal openness to maximal openness. The placement from minimal to maximal is as follows: Judaism, Christianity, Islam, Hinduism, Buddhism, Confucianism, and Daoism.

Starting, then, with Judaism, we are asking how the energy of the great creator is, in comparison to the other traditions, relatively closed off. Separation from the divine energy begins at the outset with the *Genesis* myth of the expulsion of humans from a low-entropy paradise (i.e., Garden of Eden) and into a high-entropy world of hardship, suffering, death. (*Gen.* 3, 16-19) It is not without interest that just before the expulsion God makes clothes for Adam and Eve (*Gen.* 3, 21) – an act which might be taken as a harbinger of the Law that will develop out of the Ten Commandments (*Exodus*, 20, 1-17). For does not the Law function, not only as a kind of spiritual clothing, but also as a way of connecting with the divine energy? In any case, the manner of the Law's bestowal on Mount Sinai bespeaks how the divine energy is dangerous and there must be a barrier or boundary between the people and God lest that energy destroy those who get too close. (*Exodus*, 19, 21-25) The antagonistic nature of the divine energy is displayed in other *Old Testament* contexts: God's flooding of the earth in the story of Noah (*Genesis* 6-8), God's thwarting of the construction of the Babelian tower by confusing the language of the builders (*Genesis*, 11), and God's answer to Job's affirmation of his righteousness in the wake of his unjustified suffering. The latter tale goes beyond stating that God's power transcends any human attempt to channel it via bland statements affirming God's righteousness. God's ways are not the ways of a human, and one cannot channel that energy even by way of human categories of good and evil. Job repents of his rashness for attempting to call God to account. (*Job*, 42, 6)



Of course, these impediments notwithstanding, the divine energy does flow into the Jewish community by way of a complex set of laws enunciated in the *Torah* and *Talmud*. However, it is beyond the scope of this discussion to interpret the entropic nature of this flow which is incredibly rich and detailed with respect to every aspect of life and which is also the subject of endless debate. The fact that only what are called ‘orthodox’ (or even ultra-orthodox) can live up to the rigors of this corpus is an indication that the energy flow is more closed than it is open.

What could allow the energy flow to increase between human and divine if the law (Jewish or otherwise) acts as a kind of energy ‘strainer’? Christianity has developed a set of more direct or open channels, the first being the figure of Jesus himself, taken by some to be a kind of incarnation of the divine. The idea of ‘sonship’ with respect to the creative power of God brings the energy directly into the world in a way that can transform the life of one who, in an act of faith, accepts Jesus’ saving sacrifice. Should this figure appear too remote or judgmental, then one has the figure of Jesus’ mother, Mary, as one who might act as a kind of intercessor for the individual seeking to bring the loving energy of Jesus into his/her life. Moreover, the energy channeling does not stop there, for Jesus built his church on the rock (Peter or *petros*) of his fisherman disciple, and the church developed seven sacraments to channel the divine energy directly into people’s lives. The most relevant of these sacraments from an entropy perspective is probably the Eucharist, where, in commemoration of the last supper, the body and blood of Christ are directly taken into the body of the worshiper.

The foregoing list could be extended to include powerful works of art, such as Michelangelo’s Sistine Chapel ceiling fresco or Dante’s *Divine Comedy* or Mozart’s *Requiem*. The proliferation of such aesthetic expressions illustrates how Christianity became such a powerful movement. For the way in which Christianity goes beyond Judaism is precisely in its ability to tap into the divine energy in a way that draws many human beings together and mobilizes their collective energy to create works of art which arguably bring one closer to the divine. With respect to energy deployment, that very closeness can bring more of the divine energy into the world – an energy that may inspire people to do acts of charity, spread the word, and even develop new channels. Insofar as these channels lead to sectarian conflict as Christianity fragments (Eastern Orthodox, Protestant, etc.), one can see an entropy increase following in the wake of what I would call this tradition’s ‘energy channeling technology’, and thus there is a price to pay for going beyond Judaism’s more restrained energy channeling techniques.

It is beyond the scope of this essay to compare the sectarian aspect of Christianity with that of other religious traditions. However, to the extent that Christianity puts a focus onto personal salvation as opposed to that of the group, its enhanced energy channeling capacity has a tendency to work against itself. For an inspired individual – an individual who has experienced a powerful infusion of the divine energy – can become the center of a new community as many others are drawn to that vehicle of God’s energy and devise ways of keeping alive what that

individual represents. The result, then, of a focus on personal salvation can be a fragmentation of the Christian community – a fragmentation that is endless unless a part of the divine energy is deployed to preventing an individual’s profound experience of personal salvation from becoming the core of a new sect.

Islam seems to address itself to the problem of fragmentation right at the outset by affirming that Mohammed was not only a messenger (i.e., energy channel in our terms) in the tradition of Abraham, Noah, Moses and Jesus, but also the last and (by implication) the most authoritative of these channels of God’s word. Thus, fragmentation based on the possibility of future channeling by some other figure is directly nipped in the bud. The message is, of course, a form of divine energy, and we must ask in what other sense the assertion of there being no possibility of a further mediation facilitates a greater flow of divine energy into the world – a flow that exceeds what Christianity brought to the fore via a host of mediators (e.g., Jesus, Mary, saints, the church, the sacraments, etc.), which in the context of entropy could be called ‘mediatory technologies’.

The possibility of increased energy flow follows from the ultimacy of Mohammed’s message in at least three ways:

- (1) The ultimacy is understood to encompass and perfect the previous mediations of Judaism and Christianity, which were deemed to have been corrupted. (Corruption, from the point of view of this essay, resonates with entropy increase.) This means that Islam positions itself as going beyond the limits of the foregoing traditions to increase and perfect the connection between humans and God.
- (2) Perfect ultimacy in the message suggests to the hearers that questioning is not only unnecessary, but a symptom of the prideful self-dependence that blocks the flow of divine energy. Moreover, if questioning is inappropriate, the hearer is led to adopt a stance of pure submission to God’s will – a submission that gives Islam its very name and facilitates the flow of God’s energy into the culture.
- (3) That this perfect or purified ultimacy is focused on a particular person speaking a particular language (Arabic) and that the message loses a significant portion of its meaning in translation – both of these factors might be interpreted as a strategy for undoing or at least limiting the high entropy dissipation of Babel (i.e., the confusion of mutually unintelligible languages that require energy to be translated into each other), the diasporas of Judaism, and the ongoing fragmentation of Christianity. Thus, energy is more effectively channeled if it is kept relatively undivided and the energy diffusion attendant upon translation is at least minimized.

Apart from greater openness to (or connectedness with) God's energy coming from the channeling of perfect ultimacy in the message, that openness is also enhanced by emphasizing a certain quality of that energy. That quality can be seen in the Koran's ongoing characterization of God as 'compassionate' and 'merciful'. At first this energy quality seems less 'open' or connecting than is that of the bridging figure of the loving Jesus, who stands between the human and divine and appears to bring the two parties closer together. Yet while it is true that in Islam no such bridge is feasible given God's absolute 'otherness' or super-transcendent nature, the possibilities of connection are actually facilitated in this context. Love, after all, calls for reciprocation, which is not always forthcoming. Hence, the energy flow, indicative of openness, must be qualified by the possibility of rejection. Of course, God's compassion and mercy have their limits; and when prideful self-dependence stands in the way of their acceptance, hell is the ultimate result. However, to the extent that giving up one's pride is easier than reciprocating love (which may not be possible even if pride has been eliminated), Islam's channel to God has a greater degree of openness.

Finally, inasmuch as the context of submission to God's will is communal (i.e., from joint prayer to joint pilgrimage) rather than just individual and that this communal quality is encouraged via a weakening of the prideful boundaries of the self, one suspects that the unity systematically encouraged and achieved on the earthly plane resonates with the unity that characterizes God. In that sense openness to God and the channeling of divine energy is based on a flow of 'like' into 'like' and is strengthened in a way that goes beyond what Christian love is seeking to achieve. Indeed, Moslems would claim that the monotheistic and unified essence of God is compromised by concepts such as the trinity (Father, Son, Holy Spirit); and, if they were using the entropy metaphor, they might complain that such complexity undermines the energy flow by dividing it or by creating a set of ideas that may limit its ability to enter our lives and thereby feel closer to God.

Islamic 'flow-facilitation', while addressing itself to what might be called Judaeo-Christian blockages, is itself far from complete. God's transcendent otherness in Islam is still reminiscent of Job's experience when confronted by God's ineffable and overwhelming power. Hinduism, much older than Islam, nonetheless is characterized by a greater closeness to the divine energy, conceived at its deepest levels as the more impersonal Brahman – more impersonal than the Father-Creator of the great monotheistic traditions. What is Brahman and how are humans related to it in terms of closeness? At its deepest level Brahman is divinity without attributes, a kind of pure creative consciousness, the experience of which entails bliss. (Prothero, pp.149-151) While one would think that such a trans-personal energy source would be distant from the human in a way that goes beyond the more personal creator of the monotheistic tradition, Brahman is actually closer since it exists within each human as the Self or *Atman*. In one of the most famous expressions in Hinduism, *Atman is Brahman*, one can see that there is a closeness to the divine that would be unthinkable in Islam, Christianity or Judaism. In a mystical sense, of

course, such closeness is not impossible in these other traditions, but in Hinduism that mystical sense is more of a norm.

Realization of the foregoing equivalence at the level of experience rather than at the level of theory is the key to the liberation of the self (*moksha*) from the otherwise endless round of rebirths (*samsara* or wandering according to the inescapable laws of karma). However, such realization is not easy and can take several forms, one of which is a natural rising through the caste hierarchy by a scrupulous adherence to one's prescribed duties. At a certain point in the progression of lives, the self or soul might achieve a status or level whereby one can spend a certain part of one's life renouncing 'this-worldly' concerns and seeking instead to realize the truth of the Atman-Brahman unity or oneness. Another strategy of release might entail loving devotion to some god (*bhakti*), who can aid the self in realizing the ultimate goal of Hinduism – a goal whereby the illusory boundary between 'self' and the 'universal whole' underlying all things is eliminated. Whether this merging is ego-expansion or dissolution is probably as irrelevant as it is inconceivable from the perspective of our ignorance.

With respect to energy flow, the internal openness of the Self to the impersonal divinity of Brahman is balanced by the external restraining force of caste division and the plethora of gods who are not only many in number but also visualizable in the external sense. It seems that extreme closeness in the internal sense would wash away all social and cultural distinctions at one blow if it were not balanced by a set of externalist channels to direct the intense energy that must come from Atman-Brahman intimacy. By the same token, a greater degree of closedness of the Judaeo-Christian-Islamic self with respect to the more personal divinity of God does not require a host of rigid external structures (such as numerous caste divisions and a varied pantheon of concrete divinities) to control an explosive intimacy with the energy of the spirit. It is the very absence of such intimacy at the internal level that facilitates a greater fluidity in the mundane world – a fluidity that in the Christian West lay behind the evolution of a more 'liberal' approach to life.

Is the flow of energy further increased in Buddhism? Is that increase based on what might be called a greater openness to the ultimate? If the transcendent energy foundation, as in other religious traditions, is that to which we are drawn, then Nirvana would play the role of Brahman or God, but it is more like a negative than a positive energy, more like gravity that pulls us than a creative singularity that generates all things. Although highly pragmatic Buddhism displays an aversion to the metaphysics that seems to characterize the Hindu tradition, one needs to look at how there is a greater degree of openness to foundational being in the former approach to life.

What then is foundational being from a Buddhist perspective? At its simplest level it is the complex network of cause and effect changes of which we are an intimate part. There is no abstract Brahman-Atman privileged position if for no other reason than that the self is not some

enduring unity but a shifting complex of sensations, perceptions, feelings, ideas, and responses. (Smart, p. 17) Whatever the natural energy underlying this change, humans are already intimate with it, close to it, open to it because they are it. But to be human is to experience this energy in a negative way – the way of suffering – and it is precisely a misdirecting of human energy to the futile endeavor of holding onto or trying resist this flow that leads to suffering. The way out is to realize our ignorance, which is no less than the belief, fueled by desire or craving, that we can hold onto that which will invariably pass. Positive energy, then, is that which we expend in the effort to overcome ignorance, not just in some theoretical understanding, but in the practical sense. When enlightenment is realized, one has connected to the ‘negative’ energy pool of Nirvana, which draws all beings who have reached a level of awareness that suffering is life and that it can be overcome by an appropriate set of techniques – i.e., the Eightfold Path. High entropy is a wasteful use of energy directed to holding onto that which cannot be held because of the inherent impermanence of the self and that which is the object of one’s craving. Low entropy is the Nirvana state which is beyond all the ‘crave-inspiring’ changes.

Thus, with respect to energy flow from a transcendent source and one’s closeness to that source, Buddhism exceeds Hinduism in the following ways. Since Brahman may be associated with an infinite creative energy, attunement of the self to that source entails a kind of struggle with one’s finitude, a reaching out to some god, and/or a rigorous adherence to caste duties. Contrariwise, Buddhist Nirvana pulls us because of our natural and pressing desire to be free of suffering. To the extent that we are close to our suffering – and a sense of that closeness is not hard to experience or understand – we are closer to the negative energy of Nirvana than we are to the more explosive or positive energy of Brahman. Moreover, we all have Buddha-nature, that is, we are all capable in this life of achieving Enlightenment or attaining a level of consciousness associated with the bliss of Nirvana; and while some elements of Hinduism allow for an immediate escape from the round of re-births (i.e., *bhakti* or loving devotion to some god), Buddhism has a greater sense of openness to the Nirvana state because there are no caste obstacles with which to contend. Finally, once the illusion of an enduring self is abandoned, this ultimate source of craving (self-satisfaction) weakens and the energetic ‘push’ to enlightenment is facilitated to the point that the inherent ‘pull’ of Nirvana can do its work.

As open as Nirvana might be in some metaphysical sense, compared to the Confucian view of heaven, it is relatively distant from the normal life of humanity, where the spell of ignorance can itself become an object of craving. How, then, does Heaven function as a transcendent energy source and how is its energy channeled into the way of life espoused by Confucius? As with Brahman, Heaven is also a creative force, but its infinitudinal transcendence is more muted or at least not as much of an object of metaphysical speculation in the Confucian tradition. Its energy infuses nature and human society, and in terms of its flow into the latter it is mediated by imperial authority or the emperor, who, when ruling well, possesses the mandate of heaven. When an emperor rules poorly, the mandate is forfeited; and order is restored when some figure

is shown to be a worthy recipient of that mandate.

If it is anything with respect to its relation to the human community, heaven's ordering capacity is a profoundly ethical one; and the nexus of mediation is not just the emperor as a quasi-religious figure, but also as one who grasps and develops the ethical bonds between people. That means that the rites (*li*), which mediate human interchange in a mutually respectful manner, are rigorously upheld. When this occurs, the energy of heaven finds a home in the life of the people in a way that Nirvana does not. Nirvana, as close as it is to humans in their potential Buddha-hood, ultimately beckons from a distance, whereas the Confucian heaven is infused into society via the ethical framework, not only of rites, but also of love or benevolence (*ren*).

This infusion is enhanced, not by a mystical priesthood, but by the disciplined learning of the gentleman or highly ethical individual. The primary focus of their learning is on the classic texts, supposedly produced by sage emperors, who, in developing the foundations of Chinese civilization, were arguably closer to heaven than their more contemporary counterparts. Again, in a way that goes beyond the energy flow of Buddhism, these high-minded and learned gentlemen, after undergoing a competitive examination, are placed in positions of authority in order to maintain the harmonious integrity of society by setting and embodying the highest ethical standards. Whether the 'self' of the gentleman is enduring or not, it is certainly cultivated to function as a kind of conduit for the energy of heaven to flow down to earth in a constructive manner.

The fact that China, unlike India or Europe, saw much of its history characterized by a high degree of unity – a unity that encompassed a vast area and population – is indicative of an openness and closeness to a transcendent energy, which can accordingly accomplish its impressive work of social integration. In the words of Stephen Prothero, "There *is* a transcendent dimension in Confucianism. Confucians just locate it in the world rather than above or beyond it." (p. 108, italics in original) One might, of course, say the same of Hinduism, but the energy is not flowing as effectively because it cannot be deployed to generate the remarkable socio-political cohesion that marks the history of China.

Can there be an even greater measure of openness or closeness to a transcendent energy source? Still, within the Chinese cultural ambit, there is the tradition associated with Daoism. Here we have an ineffable energy source that underlies all things, but unlike the Confucian heaven, which is the foundation of ethical order, the Dao has no will or purpose. (Liu Xiaogan, p. 241) It is the foundation of all things and infuses them in a way that is not intelligible to human beings, but may be intuited as that which functions spontaneously and is best apprehended by making space for it and its power to manifest appropriately rather than going out to grasp it via extensive Confucian learning. This 'making space' is associated with the Daoist principle of *wu-wei* or

‘doing nothing’ so that all may be accomplished.

How, then, might this transcendent energy be closer than the Confucian heaven and more open to a human community than that which is mediated by Confucian learning and rites? With respect to the latter, rites and learning would be perceived as obstacles to the flow of energy and the Daoists wish to replace that artificial barrier by an attitude of openness to the flow of nature – a kind of spontaneous adjustment to the spontaneity of nature itself, which seems to create without effort or struggle. With respect to the former, we are closer to this all-infusing energy to the extent that we adopt the pole of passivity, acceptance, humility, softness, which is easier than adopting the opposite set of polarities associated with activity, criticality, pride, and hardness. Because Daoist energy works by a spontaneous movement of energy from one side of an opposition to another, it is obviously more advantageous to adopt or identify with the passive so that nature-based action may take place rather than have a person taking action and setting up some kind of opposition to that action.

Unlike Buddhism, which sees life as suffering exacerbated by a delusional attachment to what is ever-changing, Daoism affirms life in all its changes and indeed eschews attachment in favor of attunement to the flow, by which the power of the Dao infuses one’s life and the life of a community that seeks to live in harmony with nature. While Daoist philosophy is indifferent to longevity, let alone immortality, Daoist religion seeks to extend life as far as possible – a stance which bespeaks a closeness to the Dao as the energy which underlies all life. (Xiaogan, pp. 284-285) Whether the techniques adopted to this end are effective or not, the contrast with Buddhism could not be stronger.

## **8. Conclusion: Reflections on the Arrow of Time**

We are now at the point of summing up. Entropy principles have allowed us to see the seven major religious traditions as connected along two complementary axes. The X axis saw an ever increasing level of openness to transcendent sources of energy, moving from a minimal level of openness in Judaism to a maximal level in Daoism. In contrast, with respect to the Y axis of increasing potential to mobilize masses, we have Judaism-Daoism at a low point as maximal-entropy religious traditions, followed respectively by Christianity-Confucianism, Islam-Buddhism, and concluding with the minimal entropy tradition of Hinduism, where nothing is wasted and all is perfectly re-cycled. In short, we have defined a simple curve (with respect to the two X-Y entropy axes) rising from Judaism to Christianity to Islam, with Hinduism at the peak, followed by the Buddhism, Confucianism, and Daoist decline on the other side of the Hindu peak.

Entropy, however, is more than a way of understanding how energy may be effectively mobilized. In the most general sense, it also describes an arrow of time associated with an underlying and universal decline in the amount of usable energy in the universe as a whole. In other words, the arrow of time from a universal entropy perspective defines a trajectory from order to disorder, from life as complexity to death as dissolution, from usable to unusable energy. While local spheres of order do appear, their presence is only temporary; and as Rifkin points out (pp. 37-39), any attempt to forestall this process only manages to speed it up in the long run because the energy mobilized to slow down entropy in one place generates waste in some other.

How might this arrow of time descent into maximal entropy relate to the religious traditions we have been discussing? Insofar as religion seeks to bind people together, it is directed against entropy increase, which in the social context may be understood as a clash of human wills or inability to mobilize the energy of a group in a culturally constructive manner. The arrow from a socio-historical perspective, then, is a trajectory toward chaos and cultural decline, and religious traditions may be said to address themselves to this phenomenon in a few characteristic ways, which we will briefly discuss after listing the main possibilities. The Judaic-Daoist response seeks to go with the flow, each tradition adjusting itself to the trajectory of time. The Christian-Confucian set goes against the flow. Islam-Buddhism attempts to step outside the flow. Hinduism, in moving the more superficial self toward its Atman root in order to gain oneness with a super-cyclical Brahman, rejects the 'linear nature' of the arrow and sees entropic decline as a temporary phenomenon that is followed by Brahman re-creating the universe anew.

To briefly elaborate, first from the Judaic-Daoist pairing, the former tradition is always adjusting to the exile-return temporal trajectory of Jewish history without any expectation that this has an end that humans can know while the latter tradition is continually adjusting to the dualistic yin-yang flow of nature also without any expectation that this has an end that humans can know. In contrast with this 'history-nature' attunement strategy, the Christian-Confucian pairing goes against the flow in a radical way. While the latter believes cultural order and resistance to decay can be maintained by moving back in time toward the minimal entropy origins of civilization developed by the 'mythical' sage emperors, the former adopts a more personal temporal-reversal strategy of becoming the child who transcends death and lives in blissful communion with the loving Father in heaven. Reversing the flow contrasts with escaping the flow entirely, that is, somehow stepping outside it in the Islamic-Buddhist pairing. Thus, affirming Mohammed as the last prophet and submitting oneself unconditionally to the will of God implies, for the true believer, a minimization of the existential choices that would normally define the temporal trajectory of a human life. Similarly, the Buddhist goal of Nirvana entails a transcending of the endless changes characterizing the temporal flow, which the unenlightened must endure in the condition of suffering. Finally, beyond adjustment, reversal and escape with respect to the arrow of time, there is the Hindu strategy of placing the arrow in the framework of two circles – one small and the other great. While the former is associated with a karmic recycling from one



life to the next, it is nonetheless possible to escape by realizing one's inner-self intimacy with Brahman. However, with respect to the larger circle, there is no possible escape, for it expresses Brahman's cyclical self-expression in one universe after the next. Each universe ultimately dissolves into a high entropy chaos and thereby follows time's arrow. But Brahman is infinitely creative; and inasmuch as this super-transcendent consciousness is joyous in its endless self-expression, souls united with it must share this experience.

Are these the only strategies to be adopted with respect to the arrow of time? One other approach is that associated with what might be called the 'secular-scientific-materialism' of modernity. Not seeing itself as a religious tradition, modernity nonetheless has adopted a particular strategy with respect to time's arrow, and that is the one of using technological power to get ahead of it, to out-run it (so to speak). For example, insofar as genetic engineering may be directed to slowing down or even stopping the aging process, there is here an attempt to go beyond the temporal arrow of entropic aging that is swiftly bearing down upon us. Whether or not this is achievable is beside the point. For, in a manner that is similar to the other religious traditions we have been discussing in this essay, the modernist strategy has the power to bind people together in a common and compelling social project.

While not all religious traditions have been included in this synthetic overview, the major ones have been brought together under the aegis of the entropy metaphor. What this implies is that each tradition examined in this discussion is not an accident contingent upon the spiritual genius of one individual. Instead, the teachings and/or messages of these individuals took root because they articulated positions that had specific places on the 'curve'. That is, they expressed specific levels of entropy as well as degrees of closeness or openness to sources of transcendent energy. Despite a lack of quantitative categories, our qualitative ones place these traditions in interesting relations with each other – relations that indicate that these traditions exist precisely because they occupy unique places along the curve defined by the two axes. In other words, the inspired messengers or mediators of the divine who came closest to these crucial points on the curve were the ones who were heard and continue to be so to this day.

We live in a divided world where one of the key principles of division is, ironically, how we form cohesive groups at a more local or culturally specific level, the level of fundamental religious traditions. There is no right or wrong here, but there is an ignorance of how these traditions may be connected. If there is an ecumenical solution to the problem of these great religions being unable to communicate effectively with each other, it would even be more ironic if a principle of effective communication came from the realm of science – a supposed antagonist of religion. One cannot help but wonder: if science can come to the aid of spirituality, might not the reverse also be true?

Perhaps it is fitting to conclude this sketch with the foregoing question. For this discussion is itself more an occasion for the asking of questions rather than for the providing of definitive answers. The question with which I started was whether the entropy metaphor could shed a kind of integrative light on the diversity of religious traditions, and that has led to new questions, one of which is whether something so vast as a religious tradition can meaningfully be reduced to a set of principles (i.e., ordered) in the first place. Does the very attempt to order what is inherently not subject to order increase the amount of disorder in the universe? Is order with respect to matters of the spirit hopelessly caught up with human subjectivity? Finally, are such questions, no matter how challenging, the spark to new levels of creativity, to ecumenical visions of order that can scarcely yet be imagined?

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