Healing the Breach of Faith Toward Everything That Is: Integration in Academia

By
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[…] an attitude of doubt, however, which in the West was first clearly stated by Descartes, involves a breach of faith toward everything that is. This breach entails the hostility of all against all and against all things. Nothing can be sure and immediately certain any more except one thing, the doubting ego. If this were not there, who would be capable of doubting at all, of thinking, of having insights? Cogito ergo sum. However, in order really to secure this one single certainty and to make it powerful, Western thinkers since then have been increasingly driven to acquire mastery over the phenomena that aggressively confronts the ego…

[Indian thinkers] have not seen beings as things to be represented in the consciousness of an ego-centered human subject in the forms of inner-psychic pictures, but as things revealing themselves directly to the human existence. This approach cannot be a mere astonishment and amazement at the fact that something is – and how it is. Nor can it be a doubting of the reality of the world. Only a human being who is deeply moved by awe and who remains in a state of reverence does not fall prey to the will-to-explore-and-dominate that which shows itself to him, but remains all ears and eyes for the summons of the awe-inspiring phenomena…

[Right thinking] consists in a perfect orientation of everyday life in the direction of non-violence, non-attachment, honesty and purity. This is followed by true meditation, in which he who meditates becomes one with the ultimate truth…

A millennial experience has led [India's best thinkers] to the insight that unmediated and liberating knowledge of the deepest ground-nature of all phenomena is bestowed on him who meditates in a spirit of awe and reverence…

Gopinath Kaviraj, philosopher saint of the 20th century, quoted in Medard Boss A Psychiatrist Discovers India, 1965:108, 120-121. [1]

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[1] Medard Boss never names his interlocutor, referring to him simply as "the master" or "the sage". His identity was revealed to me by the late Dr. Giri Deshingkar of the Center for the Study of

Introduction

The modern paradigm of knowledge, formulated in the 17th century, was explicitly described by both Francis Bacon and René Descartes as one that would deliver mastery and control of the world: knowledge as power. A knowledge well suited to the emergence around that time of an ever expanding market economy and to the beginnings of conquest and colonization. Or, as James Scott has argued in his book *Seeing Like a State* (Scott, 1998) a knowledge also functional to the then emerging centralized Nation-State, with its need to survey the nation from a centralized vantage point. This way of knowing did lead to the conquest of the world, both human and more-than-human. But this breach of faith towards everything that is has also led to deep alienation and meaninglessness as well as military and ecological destruction on a scale hitherto never attained.

The manifestation of these in the United States takes ever more frightening forms. The most disturbing are the bursts of deadly violence in schools, the steadily lowering age of suicide with children as young as five being reported, the epidemic proportion of addictive behavior of all kinds and the global environmental crisis. What is happening to people and to the more-than-human world is related, although such a perspective is not commonly taken. The more-than-human world, along with a good part of the human world, are both in need of healing. It is only in a worldview in which there is a "breach of faith towards everything that is" that this correlation becomes obscured.

The crisis that at present is most visible and uppermost in people's minds in this country is that of the threat of exterior terrorism. One important aspect of that crisis seems to be the failure of a genuinely pluralistic way of knowing or epistemology. The fundamentalist terrorists mirror the modernist claim to universal certainty that is the legacy of the scientific revolution. The claim to certainty, since the enlightenment in particular, has not been made in a religious idiom. It is just this separation which eventually made possible a pluralistic legislation protecting the freedom of religious expression. However, the fact that freedom of religious expression is protected in the United States does not at all mean that there exists a pluralism in the epistemological domain. The two domains–that of knowledge and that of religion–are seen as "non overlapping magisteria" (NOMA) to use Stephen Jay Gould's memorable phrase (Gould 1999). But to the terrorists, this distinction seems to vanish.

Developing Societies in Delhi. He told me that Gopinath Kaviraj's identity in this book is well known in India.

From the secular domain of knowledge ways of doing, thinking, and being have emerged that are overrunning the world in the name of "progress." Progress grows out of the applications of scientific discoveries and is thus understood, by definition, as not cultural or religious and is therefore viewed as good for everyone. However, this "progress" does in fact deeply affect people's view of what life is about, their view of morality, faith, and reality (Apffel-Marglin & Marglin, 1990; Banuri & Apffel-Marglin, 1993; Apffel-Marglin & Marglin, 1996; Apffel-Marglin, 1998). And thus, inevitably, everyone does not agree to the supposedly self-evident goodness of this progress that is overtaking the world. Furthermore, as Gopinath Kaviraj's excerpt indicates, not everyone has the same view of what knowledge consists of. In particular, no society except the modern Western one seems to have separated knowledge from morality, culture, and spirituality, or, in other words, to have separated knowledge from wisdom. The Indian example chosen for the epigraph is in this sense rather representative of non-Western attitudes towards knowledge.

The Chinese understanding of knowledge is also very different from the modern Western one. The object of knowledge for the Chinese was to find out the Tao of Heaven in order to be able to go along with it, to live according to the Tao (Bajaj, 1988). In other words the Chinese, like the Indians, did not have our "breach of faith towards everything that is" and did not separate morality and spirituality from the pursuit of knowledge. What they were after was wisdom rather than purely intellectual knowledge for its own sake. According to Jatinder Bajaj, Joseph Needham's argument as to why the Chinese did not have a scientific revolution, even though the Chinese were more advanced technologically in the 15th and 16th centuries than Europe, is because they never developed a separation between spirituality and knowledge (i.e. a NOMA type of arrangement). They also never invented a breach of faith towards everything that is.

The issue goes deeper than the fact that spreading "progress" to ever wider groups of people affects their ways of life and their sense of morality. "Progress," defined as those benefits from the application of scientific discoveries, is not in itself a neutral vehicle. Or rather the knowledge itself, in spite of the ideology of neutrality and freedom from values attached to it, in fact carries within itself a particular ethic. Terrorists and other critics of modern Western hegemony seem to react to the felt impact of this implicit ethic even if they do not typically articulate it. This supposedly objective, value-free, and secular knowledge ends up being, despite claims to the contrary, an ethic.

As the philosopher of education Parker Palmer has argued, "the images of the knower, the known, and their relationship are formative in the way an educated person not only thinks but acts… the relation of the knower to the known becomes the relation of the living self to the larger world… our

epistemology is quietly transformed into our ethic." The ontological gulf between the knower and the known, this breach of faith between the two, leads to a way of life in which the known is controlled, mastered and used for one's benefit. In the following quote, Palmer seems to echo some of Gopinath Kaviraj's sentiments. This is what Palmer says about the word "objective:"

> *The Latin root of "objective" means to"'put against, to oppose." In German its literal translation is "standing-over-against-ness." This image uncovers another quality of modern knowledge: it puts us in an adversary relationship with each other and our world. We seek knowledge in order to resist chaos, to rearrange reality, or to alter the constructions others have made. We value knowledge that enables us to coerce the world into meeting our needs– no matter how much violence we must do. Thus our knowledge of the atom has brought us into opposition to the ecology of the earth, to the welfare of society, to the survival of the human species itself. Objective knowledge has unwittingly fulfilled its root meaning: it has made us adversaries of ourselves (Palmer, 1993).*

Our government's response to the exterior terrorists is in keeping with this ethic: more coercion, more violence in order to bring about the desired result. It seems incapable of seeing with the eyes of those who are on the receiving end of this adversarial and violent epistemology-cum-ethics that has come to pervade the culture of modernity.

Faced with the extremism of both the internal terrorism of kids using guns to kill their comrades and teachers in schools and with exterior terrorism, one senses an extreme helplessness and frustration on the part of both these groups. Because of asymmetries of power and voice in both situations, the fact that what is offered to one as positive, neutral and to be emulated is instead experienced as violent, dominating and alienating, even inaudible and invisible. However, conversation and dialogue are forestalled not only by asymmetries of power but also, we would argue, by the claim to certainty, a certainty constitutively separated from values. In other words, the implicit ethic of aggression and violence embedded in modern epistemology is denied and thus cannot be addressed. Terrorism, both interior and exterior, is of course the limiting and exceptional case. The vast majority of people react with a variety of self-destructive behaviors. This is particularly evident on college campuses where an epidemic of eating and other addictive disorders has been going on.

The knowledge created in the 17th century has delivered enormous technological, intellectual, economic, and political power to the modern West. We seem to be collectively drunk on or addicted to such power. But, as we argued above, this power comes at a terrible price in terms of individual, social and

environmental balance. Literally, we and the world are falling apart. We need to overcome the view that these deleterious consequences are side effects that can be taken care of by more of the same medicine. We need to overcome the too quick response of the "technological fix." We need to go to the root of the issue intellectually and simultaneously incorporate practices that will ingrain non-violence and compassion in our youth.

Fortunately, violence toward others or toward oneself has not been the only response. These times of crises have also given rise to a great burst of creative responses of all kinds. A growing number of people are turning toward a variety of contemplative practices, many of them of Eastern provenance. A growing number of hospitals have created centers where contemplative practices are taught to relieve a variety of medical problems resistant to biomedical approaches. Most of those are modeled on the path-breaking work of Jon Kabat-Zinn at the University of Massachusetts Worcester. Another extremely hopeful and promising development is taking place in higher education where various forms of contemplative practices are being integrated into the curriculum. These do not depend for their validity on pre-existing metaphysical assumptions. In other words they constitute a form of secular spirituality. In such a development, there is a recognition that non-violence, empathy, compassion, and patience are values that are not intrinsically linked to any one particular religious tradition. They can be fostered in a secular manner, in a secular setting. The issues of violence, responsibility, empathy and compassion can be addressed intellectually as they often are in classrooms all over the United States. However, for such qualities to become ingrained and habitual requires some form of embodied practice. Thus we are offering in this paper a two-pronged attempt that we hope begins to address the perceived crisis. One is a more traditional intellectual task attempting to make visible the contingent nature of the birth of the "breach of faith toward everything that is" as well as of the separation between fact and value. The hope is that such an exercise will facilitate change and an acceptance of the need to heal the breach of faith and rejoin fact and value. This might enable us to see that the separation between values and facts, knower and known, may have been a successful answer to very real dilemmas at the time of the birth of modern science in the 17th century, when the problem of certainty was also a religio-political problem of stability. This in turn will make clear that the exigencies of our times are radically different and require a radically different approach to knowledge, one that seeks wisdom rather than knowledge (Maxwell, 1984). One that heals the breach of faith toward everything that is. One that integrates the heart, the mind and the spirit. The first part of this paper is such an attempt.[2]

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[2] The introduction and first part of the paper is written by Frédérique Apffel-Marglin and the second part by Mirabai Bush

The second part of the paper documents the introduction of contemplative practices to classrooms in colleges and universities across the nation. Including contemplation in the classroom fosters a less competitive and more compassionate kind of person. Furthermore, contemplative practices foster an experiential knowledge that heals the breach of faith toward everything that is. In the second part of the paper, we see that such practices find an echo in the postmodernist idea of the fragmentary nature of reality, the lack of a unifying self or narrative. However, unlike postmodern culture, contemplative practice opens us to an experience of interconnectedness with everything that is. The cultivation of compassion, non-violence and non-dualism requires a discipline of praxis, such as meditation. It cannot be attained through purely intellectual means since it is not essentially a thinking but a being and a doing. Contemplative practices in those experiments do not replace critical thinking but are a complement to it. These new contemplative practices in higher education open us to the possibility of creating a more compassionate, less violent future, of healing the breach of faith toward everything that is and the crisis that it has engendered.

Part I. Science as Culture: Historical Roots

Modern science emerged in its final form in the latter half of the 17th century in Western Europe as the most convincing response to the loss of certainty brought about by the explosion of new spiritual-cum-epistemological movements in the Renaissance, as well as by the event of the Reformation and its aftermath. The response was at once epistemological and political and it was successful. The politico-religious events of the period of the Renaissance and Reformation gave rise to a new cultural map, the cultural map of modernity.

The Renaissance saw the influx of ancient Greek, Latin, Arabic and Jewish texts. It was a time of increased long distance trade and of the dissolution of the feudal manorial system. It gave rise to a burst of new ideas and new movements and most importantly to the Reformation. As long as these ideas were restricted to small elite groups, it did not create major social dislocations. This changed with the Reformation and the echo it found among the powerful as well as other classes. The sixteenth century saw no less than eight bloody civil wars in France between the protestant Huguenots and the Catholics as well as major religious conflicts in England.[3] The voice of the Renaissance Humanists as well as that of the more pluralistically inclined occult philosophers was drowned by the fury of both Protestants and Catholics as well as the raging fires of the witch-hunts. As historian Mack Holt has argued, Huguenots were seen as a cancer and a rot in society and they had to be not only exterminated but humiliated and their

[3] I will restrict myself here principally to the French case.

spaces purified by fire and water. Holt quotes a doctor from the Sorbonne, Jean de la Vacquerie on religion and schism writing in 1560:

> *Religion is the primary and principal foundation of all order, and the bourgeois and citizens are more bound together and united by it than by their trade in merchandise, the communication of laws, or anything else in a civil society…and that there is never more trouble or a greater tempest in a commonwealth than when there is some schism or dissension concerning the issue of religion there…The Huguenots have always been the mortal enemies of kings and great nobles…and by their false doctrines they have often incited their subjects to rebel against them, and to forsake the obedience, the recognition, and even the respect they owe to their masters and seigneurs (de la Vacquerie, 1995).*

The St Batholomew's massacres of 1572 saw the populace in Paris and later in many provincial towns respond to the court's assassination of the Huguenot entourage of Henri of Navarre at his wedding by savagely falling upon Huguenot men, women and children, mutilating their bodies and burning their houses. This massacre is perhaps the most well known, but unfortunately not the only one. Lethal fury was shared on both sides, each considering the other heretic. In this series of civil wars, both sides sought and received support internationally. Eventually, this conflict and similar ones in other parts of Europe erupted into a full scale international conflict, the thirty years war from 1618 to 1648.

Huguenots questioned publicly the right of an unjust king to rule, arguing that the people ultimately were the source of the king's power and not God and the Church. The king's coronation, the *sacre*, was a ritual that transformed him into a God-King and a priest and made his person inviolate and able to perform miracles such as curing through touch. The oil used for the *sacre* was in the Bishop of Rheims' custody. Thus French Kingship was intimately tied to the Church even though it had won a measure of autonomy in its powers to appoint bishops, archbishops and other church figures, resulting in what is known as Gallican kingship. The Huguenots were thus accused of *lese majesté*, a crime of enormous proportions, at once political and religious.

What the quote from Jean de la Vacquerie underlines is that polity and religion were one. For the polity to be unified, the religion had to also be. This had been the case in France and other European countries for centuries. The Church furthermore had had a monopoly on knowledge all along, the Cathedral Schools of the 12th and 13th centuries and the Universities that followed them, all being Church establishments (Noble, 1992).

The culture that eventually gave rise to modern science grew in the fertile, albeit unstable, soil of Renaissance Europe. The natural philosophers (the term science only appeared in late 17th, early 18th century) drew principally from two major intellectual strands: the newly (re)discovered classical Greek philosophers, who were being translated mostly by Arabs, and the many occult philosophies that emerged in Europe then. The writings of Aristotle, as translated and commented upon by Ibn Rushd (Averroes), were particularly influential, opening a whole area of *natural* explanation for phenomena, utilizing reason. Averroes' works were banned from being taught in universities in 1277 by church officials, indicating that the rise of a mode of inquiry independent from Church control was threatening to the Church. This led the great synthesizer of Christian theology and Aristotle, St. Thomas Aquinas, to lay down his pen at the age of 40 and recant his writings. Averroes, however, continued to be taught in the more independent Italian principalities such as Padua and Bologna. Both Copernicus and Galileo studied at Padua.

Later, with the Renaissance proper, other texts appeared in Europe due to both the fall of Constantinople to the Turks in 1453 and the expulsion of the Jews from Spain in 1492. Many Greek scholars left Constantinople for Europe after 1453. The writings of a mythical ancient Egyptian magician/sage, Hermes Trismegistus became widely circulated and influential in certain circles at that time. So did the introduction of a Jewish mystical system, Kabbalah, which was taken over by Pico della Mirandola, Ficino, Agrippa, Giorgi and Reuchlin in late 15th and early 16th centuries, and given a thin Christian veneer[4] (Yates, 1979). Christian Cabala, Hermeticism, the works of Arab physicians, Alchemy, Neoplatonism, as well as the practical knowledge of many popular wise women and men, were the main ingredients in various Renaissance trends referred to collectively as "occult philosophy." Magic, that is the effecting of transformations in this world through incantations and the manipulation of certain objects, was an important part of this movement. In England the leader of the Elizabethan Renaissance was the Christian cabalist John Dee, (1527-1608).

This body of thought claimed to be built on the common ground of all the traditions known to that world, namely Christianity, Judaism, Islam and Gentile (or pagan). The first Christian cabalist, Ramon Lull, writes that Moses de Leon is writing the greatest Jewish Kabbalist text, the Zohar, around 1274 (Scholem, 1995; Fine, 1995). Lull's work is a direct influence on the later 15th century occult

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[4] Yates points out that the first Christian Cabala was written in Spain in the 13th century. It is contemporarily with the flowering of Jewish Kabbalah by Ramon Lull in 1274. Lull wrote in Arabic and did not use the Jewish letters so important in the Kaballah. Pico and Ficino, though, used Jewish letters and the mysticism of their number (*gematria)*. Lull was the first to argue that the Tetragrammaton, using Cabalistic method revealed the name of Jesus, thus proving that it was the name of the Messiah through ancient Jewish texts.

philosophers. In this work, the then universally believed theory of the four elements, earth, water, air, and fire, with their corresponding qualities of cold, moist, dry and hot is expounded. These elements and qualities pervade the terrestrial plane as well as the astral plane. The planets and the twelve signs of the zodiac had predominantly cold, moist, dry or hot influences, thus linking the human, natural and celestial spheres in a single and continuous domain.

This non-dualist cosmology characterized occult philosophy throughout its history. It soon, however, incurred the condemnation of the Church. It was associated with magic since it involved the manipulation of elements of the world along with incantations and other acts to effect transformations in the world and in the philosopher himself.[5] This was particularly true of alchemy. Christian doctrine recognized two kinds of efficient causes of events: one through natural causes and the other through signs or symbols. However, only church-designated signs were effective. Other signs, according to Aquinas, were superstitious although he did recognize that formally nothing could differentiate them (Belmont, 1982). Europe was (and to some extent still is) full of objects and places that were firmly believed to be efficacious in the cure of a variety of disorders and complaints. These were mostly places and objects sacralized by the power of the saints or relics. One important such object was the oil in the *ampolla* in the custody of the Archbishop of Rheims in France, with which the king was anointed and transformed into a god-King. Thus for Catholics, the differentiation between an efficacious Christian symbol and an inefficacious superstitious and always potentially satanic one was crucial.

The occult philosophers' use of magic opened them to the allegation that they were practicing black magic; that they were dangerous persons. They did not restrict themselves only to those places and objects authorized by the Church as being efficacious. From the point of view of the Church, they were thus engaged in superstitious and potentially satanic practices, that is in magic. This associated them with the witches whom the Pope had declared heretics in 1484 (Noble, 1992).

This corresponded to the time when Pico della Mirandola, Ficino and Giorgi were writing their Christian cabalistic and hermetic texts and making them known in Rome. The association of the occult philosophers with the witches led to their demise in the craze of the witch hunts of the 16th and 17th centuries. Like popular magic, occult philosophy and magic did not restrict the efficacy of signs to those authorized by the Church, but rather saw the whole of nature as alive,

[5] All the known occult philosophers were men; this does not mean that women did not participate but they have disappeared from the record. Women, however, were predominant in popular magic and healing.

infused with spirits, angels and demons. The same elements with their corresponding qualities pervaded the world, both terrestrial and astral, as well as humans, both in their bodies and their psyches (Merchant, 1980).

The "breach of faith towards everything that is" of modern science was prefigured in the works of certain reformers, particularly that of Huldrych Zwingli, who postulated two radically separate aspects of reality, namely what is intrinsically so or the literal, and what is symbolically true, which refers to the invisible deity (Uberoi, 1978; Burke, 1990). In this Protestant worldview, God and humans could only be united in the mind through belief and faith, whereas God and the external world became radically estranged.

For both Protestants and Catholics, the witches and the occult philosophers became heretics. Both Protestants and Catholics unleashed their respective inquisitions against those two groups (Bayrou, 1998). For Protestants, the Catholics were lumped in with the practitioners of magic. The Protestants attacked not only the cult of relics and other sacred objects with magical properties, and the buying of indulgences, but labeled the core sacrament of the Eucharist as superstitious and pure magic. Protestants insisted on the metaphorical nature of transubstantiation, where the wafer and the wine only *recalled,* rather than embodied, Christ's sacrifice. The Protestants rejected the Catholic doctrine of an actual transformation into the body and blood of Christ. And of course for the Catholics, the Protestants were heretics to be exterminated and purified, if they could not be converted.

The 16th and 17th centuries were thus marked by the violence of the witch-hunts and of the wars of religion. With the assassination in 1610 of Henri IV, formerly Henri de Navarre, France's efforts to restore stability by protecting some limited rights for the Huguenots had failed. Henri IV's Edict of Nantes signed in 1598 began to be dismantled and this paved the way for the later persecution of the Huguenots by Louis XIV and their eventual expulsion from France at the end of the 17th century. And according to Holt, the Edict of Nantes may not have represented an early attempt at a pluralistic state. Holt argues that this was never Henri IV's intention; he was only buying the time it would take to bring the Huguenots back to the true faith and reunify his kingdom. According to Holt, Henri IV's conversion to Catholicism was genuine and not motivated solely by political concerns. Henri IV may have believed in "one faith, one law, one king" (*une foi, une loi, un roi*) as genuinely as did the great majority of his countrymen.

A new non-religious certainty

The Catholic priest Marin Mersenne, close associate of Descartes and co-founder of the French Académie, paved the way for Descartes' dualist and

mechanical philosophy by publishing in Paris his *Quaestiones in Genesim* in 1623. In this work he devoted particular attention to the attack on Giorgi's occult philosophy as well as on that of the English occult philosopher Fludd and his Rosicrucian movement, both profoundly influenced by Christian Cabala. As Frances Yates articulates it:

> *By eliminating Giorgi and all that he stood for in Renaissance tradition, Mersenne banished the astral linkings of universal harmony, cutting off at the roots the connections of the psyche with the cosmos. This appeased the witch-hunters and made the world safe for Descartes, which was what Mersenne was nervously trying to do. (Yates 1979:174)*

This corresponded to the early phase of the thirty years war and to the height of the witch-hunts.

Stephen Toulmin in his book *Cosmopolis* (Toulmin, 1990) gives us the context of Descartes' life. Toulmin focuses mostly on the conflict between Protestants and Catholics and in particular on Henri IV's assassination and the thirty years war, both of which touched Descartes' life directly. It is, however, vital to include also the attack on occult Renaissance philosophy and its successful erasure through the witch-hunts as part of that context. Descartes' dualistic and mechanical philosophy was the antithesis of that of the occult philosophers. It was clear by this time that a non-dualistic, vitalistic philosophy was doomed, as the occult philosophers were being doomed along with the witches. With the defeat of occult philosophy, there remained only the two Christian churches with their intractable insistence on possessing the one truth, locked in an irresolvable political and epistemological deadlock.

Descartes built his philosophy on the epistemological terrain the two warring Protestant and Catholic factions had in common. That common terrain was the realm of natural causes that could be explained by the use of reason. This terrain was separate from the world of signs for both Catholics and Protestants, albeit in different ways. For the Catholics, the world of signs was one in which the power of the saints resided in certain objects or places, that is in the world itself, but unlike occult philosophy, not in the rest of the world and especially not in places not authorized by the Church. For the Protestants, the world of signs referred only to human linguistic metaphors, products of the mind, and could not inhere in the world itself.

The success of the new mechanistic, dualistic philosophy was in great part due to the fact that, unlike occult philosophy, this philosophy did not challenge either Protestant or Catholic doctrines. Rather, it established itself in the epistemological space that they shared. According to the Finnish philosopher

Georg von Wright (who succeeded Wittgenstein at Cambridge), with this move "[t]he new science [became] a welcome ally in fighting heresies and exorcising the inferior ghosts, leaving the one superghost, the Christian Trinitarian God, sovereign ruler of the universe" (von Wright, 1991).

In the maelstrom of the early 17th century, escaping the wrath of the inquisition and escaping from the deadlock between the two warring factions of Christianity were not only epistemological moves, but survival tactics. These moves were eminently political and, as argued by Toulmin, consciously undertaken to restore the fractured certainty and unity without which Europe could not imagine itself.

It remained for Robert Boyle to operationalize and institutionalize this philosophy. Boyle had to clearly and decisively distance himself from his alchemical past. This he did through several moves. One was to make the laboratory a public space, whereas for occult philosophers it had been a secret, private space. In this public space he devised the method of public witnessing, inspired by courtroom procedures, in order to establish through consensus what had happened in the experiment. This was the foundation upon which he would build his method: the *matter of fact*. In this manner, both the suspicion of occultism and the skepticism of reliance on the fallible senses were addressed. The witnessing by several reliable persons resolved the limitations of the fallible senses. Boyle's "modest witness" had to be a gentleman of trustworthy reputation, which meant he could not be suspected of occult leanings (Shapin & Schaffer, 1985). The modest witness could not be a woman since her modesty was of the body and thus could not be of the mind. (Haraway 1997; Potter 2001). Furthermore, women had been so closely associated with the so-called enthusiast movements in Interregnum England, not to speak of the witches, that any association with women risked tainting the enterprise. Furthermore, according to David Noble, the association between women and heresy dated back to the earlier association of women and the Cathars whom the Church exterminated in the 13th century. Such an association had resurfaced with the witches and the enthusiast movements where women were highly visible. Thus, the men of science's flight from heresy was also a flight from women (Noble, 1991). The first woman to gain entrance into the Royal Society did so only in 1945 (Wertheim, 1995)!

The use of instruments to question nature had been advocated already by Francis Bacon, an alchemist and natural philosopher, in the early 17th century. By taking the instrument out of the study of the alchemist and into Boyle's public laboratory, Boyle simultaneously took the experimenter out of the equation. No longer was the manipulation of matter to be also a refinement of the philosopher's soul. The breach of faith towards everything that is was operationalized in Boyle's move to erect a boundary not only between hypothesis and fact, but

between metaphysics and experimental matters. The modesty of the witness meant his self-effacing manner and his restraint. In the laboratory, talk of religion and politics was strictly out of bounds as were *ad hominen* criticisms. The aim was to eliminate human bias, whether due to politics, religion or the senses. All of the three "technologies" employed by Boyle (Shapin & Schaffer, 1985) had the same aim: the material one, namely the use of a machine, the air-pump, to produce facts; the social one, namely who the modest witnesses were to be; and the literary one to make known the findings to non-witnesses, namely the style of writing which today we call the "objective" style. All three had as their goal to hear nature herself speak directly, that is to eliminate all human agency from the "matter of fact", what later became the "scientific fact." Boyle's intent was to establish a method that would be a perfect mirror of nature, separating clearly and precisely the human observer from the objects observed. Through this method, certain knowledge could be established in a manner that totally separated it from the religious and political sphere where conflicts raged.

Boyle's re-definition of the term "vacuum" to refer to the interior of the glass receiver in his air pump after all the air had been pumped out was part of the boundary he erected between the metaphysical and the physical. The aim here again was to avoid irresolvable conflict such as the one between vacuists and plenists raging at the time among natural philosophers. The plenists argued that a vacuum was impossible and that invisible, extremely subtle substances remained in the top of the Torricellian tube as in the evacuated receiver in Boyle's air pump. Boyle pronounced himself neither a vacuist nor a plenist, declaring such positions to be metaphysical ones, and thus irrelevant in experimental matters. With this new epistemological boundary, Boyle not only separated his science from religion and politics but also from philosophy and ethics. Here again he operationalized the extreme dualism and materialism of Descartes. As Shapin and Schaffer, among many others, have pointed out, all these boundaries erected by Boyle have the quality of being conventional rather than absolute.

This method was exceptionally fruitful and was thus imitated by those who inquired into human affairs. They called themselves eventually "social scientists," highlighting their template. The arts and humanities were separated out since the three technologies did not apply in that realm. The terrain was divided between that which pertains to human affairs–ethical, aesthetic, political– on the one hand and that which pertains to inert nature. Thus was created the fragmentation of fields of knowledge and the pursuit of knowledge for knowledge's sake. This new method gave birth to the sundering of life and knowledge.

With the vistas opened up by the new physics - the indeterminacy of the quantum world, the difficulty in separating observer from observed - the

entanglements between human and non-human worlds seem to be the new horizon within which we find ourselves today. In such a new onto-epistemological situation, the maker of knowledge can no longer bracket him/herself away from the situation of observation. To the great arsenal of scientific methodologies and instrumentation that help us observe what was seen as being outside of ourselves will now have to be added an equally impressive arsenal of practices to look in the opposite direction, into what seems to be the inside of ourselves. The next part of this paper documents a beginning along this complex new road.

Part II: Contemplation in Higher Education

"The concern is to join and integrate the search for power and material progress on the one hand with the quest for wisdom and well-being on the other. The general objective is a way of being that will enable people to humanize technology, realize the full promise of democracy, heal the Earth, and celebrate life."

Steven Rockefeller, Academic Committee member, Center for Contemplative Mind in Society

In classrooms from Princeton to West Point and the University of Michigan to Naropa, students are beginning classes in silence, "listening to" texts as only monks once did, developing mindful approaches to dispute resolution, and designing meditative cabins and sitting halls with cutting edge architectural design principles. They are all enrolled in courses taught by Contemplative Practice Fellows, a collaboration of the Center for Contemplative Mind in Society, the American Council of Learned Societies, and the Fetzer Institute. Since 1997, the program has awarded 100 fellowships to faculty in 79 colleges and universities across the United States to encourage the study of contemplative practices from a variety of disciplinary and interdisciplinary perspectives. The program supports the study of contemplation as a historical phenomenon and as a method to develop concentration, deepen understanding, and foster an interest in and understanding of the nature of mind and consciousness.

Contemplative practices are a vital part of all major religious and spiritual traditions and have long had a place in intellectual inquiry as well. The predecessors of our colleges and universities in the West, of course, were established as *alternatives* to monastic schools, where contemplative practices were central to learning. These new institutions were committed to the pursuit of rational knowledge and later to the scientific method. But, as Brian Stock (Professor, Centre for Comparative Literature, University of Toronto) explained

in an address to the Symposium on Contemplative Education at Amherst College in 2003, there are important examples in Western intellectual history of the use of contemplative practices, which he defines as based on "a spirituality that does not depend for its validity on pre-existing metaphysical assumptions or associations, that is, a secular spirituality." He names Montaigne, whose writing practice was a form of contemplative reflection, and whose interest in the nature of attention and the nature of the self is shared by contemporary contemplatives. Seneca gave such Zen-sounding advice as "To be everywhere is to be nowhere." Augustine and Seneca both used a literary device, the soliloquy, as a form of self-inquiry through oral dialog. And Augustine was the first to use autobiography as contemplative practice; the *Confessions* is an inquiry into his life and the nature of all life.

Robert Wuthnow, in *After Heaven: Spirituality in America Since the 1950's*, suggests that contemplative practices are innately American. Practice, he says, invokes the tradition of hard work, individual initiative, and responsible civic participation, values widely shared by Americans (Wuthnow, 1998). Interestingly, the contemplative practices that are now being taught and learned by Americans, in classrooms as well as in the culture at large, are most often either traditional or adapted forms from Eastern contemplative traditions, including Buddhism, Hinduism, and Taoism. These practices include yoga, meditation, qi gong, tai chi, and mantra (the repetition of a word or phrase). Even the Christian and Jewish contemplative practices that are reaching many people of faith are frequently influenced by Eastern traditions: Centering Prayer, taught by Father Thomas Keating and Father Basil Pennington (who, like Thomas Merton, learned Buddhist meditation practices) and the Contemplative Outreach network, is a Christian form that, like mantra meditation, is based on the repetition of a sacred word; many Jewish meditations include Buddhist mindfulness elements, etc. At least one form–*lectio divina*, or sacred reading–seems to be uniquely Western (Christian) and has been adapted for the classroom by many of the Fellows.

Courses that include contemplative practice have been introduced at an interesting time in academic history. They both complement and challenge the postmodern campus culture. Contemplative practice focuses on moment to moment nonjudgmental awareness, the rising and passing away of momentary phenomena, which in some way confirms the idea of the fragmentary nature of reality that post-moderns posit when they claim that there is no meta-narrative, no unifying story. No defining story, true contemplatives would agree, but unified nevertheless, in that all phenomena are interconnected, share an "interbeing," are part of a, some would say, divine wholeness. The question of contemplative epistemology is only beginning to be explored, but the contemplative approach is one of inquiry into the nature of things, a scientific suspension of disbelief (and

belief) in an attempt to "know" reality through direct observation by being fully present in the moment. Chogyam Trungpa Rinpoche, a Tibetan educated in both Lhasa and at Oxford, founded Naropa University on contemplative principles. Wisdom, he says, is "immediate and nonconceptual insight which provides the basic inspiration for intellectual study." Having seen clearly one's own mind, one has a natural desire to see how others experience reality.

As we suggest in the first part of this essay, the challenge to the other great foundation of all contemporary institutions, modernity (from the Enlightenment onward), is probably greater. Buddhist contemplatives would say there is no stable self, certainly not one that is dependent on thinking (as in Descartes), and no contemplative from any tradition would agree that it is reason alone that leads to ultimate truth. Although the contemplative investigation is in some sense scientific, and although some scientists (see Arthur Zajonc,) say that a non-rational leap happens in the moment of scientific insight, contemplatives look to an intuitive, non-conceptual, direct, experiential "knowing" as the path to wisdom. The practical legacy of the modernist tradition has also been a compartmentalized, fragmented way of learning and teaching, dualistic alienation of body from mind, emotion from intellect, humans from nature, and art from science, whereas the basis of contemplative understanding is wholeness, unity, integration.

So what has been happening in these classes? What are the fellows reporting? Is there a role for productive silence in the classroom? Just as introducing computers into students' lives didn't just affect the amount of research they could do or the length of their papers but also the way that they think (PowerPoint!), the way they relate to other students and their teachers, their health, and so on, contemplative practices have had an extraordinary range of effects on the teachers, the students, the classroom, and on learning, teaching, research, and personal relationships. These efforts include increased concentration, greater capacity for synthetic thinking, conceptual flexibility, and an appreciation for a different type of intellectual process, distinct from the linear, analytical and product oriented processes so often valued in contemporary education. (See Deborah Klimburg-Salter, "The Contemplative Scholar" on www.contemplativemind.org/programs/academic.) Fellow Robin Hunt at the University of Washington worked with contemplative practice to develop balance in a theatre piece: "I conceived of a play in which actors have to deal with all the literal meanings of balance while playing scenes dealing with the figurative meanings of the word…. Using the practice of *slow tempo*, the physical requirements of balancing demand that one find a calm and clear mental state in the moment."

In the following few pages, I will focus primarily on the potential for the cultivation of compassion and empathy through contemplative practice in the classroom. Although empathy is the capacity to feel another's emotional state (joy as well as suffering), and compassion is the experience of feeling another's pain or suffering, for the purposes of this discussion, I use the terms compassion and empathy interchangeably.

It is a contemplative premise that compassion and knowledge complement each other: "Without knowledge compassion is not efficient but without compassion, knowledge is not human." (Weisskopf, 1980). Compassion is the response of the heart to another's (or one's own) suffering. Contemplatives have sought to reduce this suffering through inner transformation (which can then lead to loving kindness and compassionate action): "Although attempting to bring about world peace through the internal transformation of individuals is difficult, it is the only way" (Hanh, 1992). Science has sought solutions through the manipulation of the physical world, but has not acknowledged the need for a systematic investigation of personal motives, attachments, and capacity for instinctive loving care. Contemplative practices bring this tension into the light of the classroom for exploration by awakening the experience of compassion itself.

Compassion exists in relationship. It can be in relationship with oneself, but in the classroom fellows most often report the changes in relationships of students with others. The majority of fellows reported that "incorporating contemplative practice into their courses changed the nature of their relationship with their students in a positive way. The process and intention of creating a space of openness and trust often led to a deepening of the relationships between the students and between the students and teachers. Even professors who usually had good relationships with their students noted that these relationships tended to go deeper and developed much earlier in the course." (Megen Scribner, Fellows Survey, 2000)

We are hearing that the students are learning not only from the text and the information but are awakened to learning more from the professor himself or herself, that is, from who the professor is as well as the information in her lecture. We have not done formal research with students, but in anecdotal reports, many students talk about these classes as a refreshing experience, with a new appreciation of their teachers, which for some teachers creates an opportunity in the classroom to take risks and explore in more experimental ways, and to connect what they are teaching to other aspects of life.

Clifford Hill, a Fellow at Columbia Teachers' College, created a web site of practices and images from diverse contemplative traditions and introduced meditation in the classroom. He found that the practice of exploring the mind and

inner life encouraged his students to use e-mail in a new way with him and each other. That communication was written more often in simple, direct language, describing exactly what was happening. There was a kind of intimacy that email makes possible but often lacks.

By introducing contemplative practice, the teacher sets an intention that learning will happen in the spirit of investigation and discovery. This intention may be common to all pedagogical methods, but it seems particularly true in these classes where, for example, the practice is silence at the beginning of class and maybe some Tai Chi movements between parts of the class. The meditation calms and quiets the mind and allows the students to let go of other things they have been thinking about, worrying about, and bringing into class, so they are more likely to begin with fresh minds. Fellow Robyn Hunt at the University of Washington described the practice she used as "a steadfast awareness of all that transpires without focusing on, and so being distracted by, any one phenomenon." The practice of paying attention and seeing simply what is there with no preconception during the meditation, transfers then to the subject of the class. At the same time, by noticing everything that is arising, the practice helps the student integrate the varied aspects of their lives. Some teachers talked about the effect of the practices on students who have experiences in their lives that adversely affect their ability to learn. Students feel that these experiences, from difficult family lives to eating disorders or financial troubles, are wholly separate from life in the classroom. In contemplative practice, the student directly experiences the way in which body, mind, and spirit are connected and can open to the subject matter as relevant to one's personal life. As that understanding of interconnection grows, the world, including the classroom, begins to make deep sense. Stress is reduced both by the calming effect of slow breathing on the body and by the intellectual understanding of the natural integration of life.

In classes where students and teachers actually do contemplative practice together the effect can be profound; it makes the statement that the professor and the students are learning together. They are together opening their minds to what is going to be discovered in this room at this time. During off-site meditation retreats for students at Yale Law School sponsored by the Center, a number of professors learned the practice along with the students. It was a significant departure from the usual hierarchical relationship, even at Yale where many of the professors play strong mentoring roles and have close relationships with their students. They were all learning at the same time, at the same level, because meditation students are instructed to bring "beginner's mind" to the situation: "each moment, new moment." The conversations that followed between the students and professors arose from the understanding by students that "you are the professor, and you know much more about the profession than I do, but we are

also two human beings exploring the nature of law, jurisprudence, justice, and the truth together. And that changes things radically."

Many professors say that they are renewed in their excitement about teaching from being able to teach in that spirit. Fellow Steven Nuss, teaching a course on Contemplating Music through Contemplative Practice at Colby College, wrote in his course description for students: "This is not a class in which I already have the answers and I expect you to learn what I know and then do a test. I don't have the answers; that's why we are doing this class." For the students it relaxes the oppression that some students feel in a hierarchical situation. It may seem like a risk for the professor, but, when attempted, it has more often authenticated than undermined authority.

At the University of Wisconsin, Richard Davidson (Davidson, 2002) has used brain imaging to show that meditation shifts activity in the prefrontal cortex from right to left hemisphere, reorienting the brain from a stressful fight or flight mode to one of acceptance, which is at the heart of compassion. Even so, twenty minutes of silence in a history class will not necessarily awaken compassion or compassionate action in all students, although intensive meditation practice has that potential. But many professors reported that compassion was awakened in students in relation to the subject being discussed. One teacher wrote, "It seemed that a circle of longing hearts immediately found its center."

Whether it was in a class using meditation to examine "the great suffering of the 20th Century" (the Holocaust, slavery, and apartheid) at Bryn Mawr or a class on environment and contemplative practice at Swarthmore, students reported that they experienced an empathetic and compassionate response of the heart to the suffering of others. In an anthropology class at University of California at Davis on Meditation and Media Violence, Fellow Alan Klima wrote, "While there are persuasive and important arguments about how mass media technology conspires to eliminate perception of real pain and suffering through "compassion fatigue" and other processes, by returning to Buddhist meditation, the course was able to open up to a wider field of discussion on this matter." He added that the combination of meditation and the class materials was able to "render the familiar unfamiliar, and the unfamiliar strangely relevant to the familiar" and that "many students began to articulate their own ethical practice of viewing violence…."

There was also an increase in compassion in the way students related to each other. One law student wrote after he got back to Yale Law School: "After we got back, I was writing a brief for a class. There was lots of research to be done, and I felt a bit behind. I was worried about it. I pulled an all-nighter and got all this research done. One of my friends asked me the next day, 'How is your research going?' I had actually found a lot of cases. Before, I would have been

very contractual and thought, ‘I don’t want to give him all my cases. I would have said, ‘Well, if you show me some off your cases, I’ll show you some of mine.’ But then I stepped back and thought, ‘Well, you know really, what does it matter? Give him the stuff and maybe it will make his brief better than yours, but it’s not that big a deal and you probably ultimately will build a better friendship of this, which is what it is really about.”[6] In a class on contemplation and environmental writing at the University of St. Thomas, a student in the class committed suicide during the semester, and the others needed to grieve. The professor, Fellow Mary Rose O’Reilly, was grateful that it had happened in her contemplative class, which created space for what was needed. “As I write this, tears again. We cried all the time in class, made a rule, *Cry and keep talking*. *Cry and keep writing*. We called it *crying practice*. And I learned that the single most important thing a contemplatively centered classroom teaches the teacher is not a pedagogical recipe but *pedagogical flexibility.*”

Compassion, as in the law student’s story, also brings up the issue of competition. Obviously competition is a motivator and has often been used well in this culture, and there will probably always be times when teachers use competition to excite students, as sports, games, and debating do. But there are many situations in which collaboration can produce a better, richer, more multidimensional result than competition. The model now in business and all learning organizations is that information is so complex and the response to global issues is so challenging, as we mention above, that they often require more than a single mind, that a group thinking and working together is more likely to find a creative response. Training in compassion and empathy, contemplative practices in open listening and inquiry, prepare students for these demands. Further, compassion and empathy developed in this way is increasing interest in ethics, and the loss of ethical systems is often lamented in the modern academic community.

An example of increased awareness of the needs and rights of others came from a course on Contemplative Practice, Health Promotion, and Disability on Campus, taught by Fellow Daniel Holland at the University of Arkansas. Students with disabilities, who are at particularly high risk for chronic stress, loneliness, and attrition, and who encounter more obstacles gaining peer support and group membership than non-disabled peers, reported significant improvement in their ability to cope with daily stressors. But perhaps of even more interest, a large number of students who did not identify themselves as having a disability or chronic illness indicated that they had gained a new, more positive perspective regarding those who do.

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[6] See reports on www.contemplativemind.org/programs/law/.

Our youth are entering the professions and the work force without a capacity to lead an integrated life in a democratic civil society where they can make intelligent and compassionate contributions. At the rational level, there is so much more to know than there ever was. On the other hand, computers are holding and processing much of that information for us as extensions of our consciousness, and that will only increase. We are faced with the question, What does it mean to be human? What is the unique and appropriate role on this planet for us and the seven generations that follow? Contemplative awakening through practice in academic settings is helping us ask that question in a way that could lead us to the essence of what it is to be human. And compassion is part of that discovery.

Conclusion

There are clearly many pragmatic reasons for incorporating contemplative practices in education. An increasingly stressful and complex environment is certainly a major factor calling for such a response. However, it is also well to recall that the post-quantum, onto-epistemological revolution has revealed the boundary between an outer non-human world and an inner human world to have been a conventional one. Furthermore, as noted earlier in this paper, such a boundary has fostered an implicit–and mostly denied–ethics of domination and violence. With the new horizon in which the entanglement between human and non-human worlds is a reality, responsibility for the worlds we jointly make becomes unavoidable. Such responsibility is a heavy burden, requiring of us all an unprecedented degree of awareness. Such a reality is closer to the insights of several contemplative traditions than to that of the classical Newtonian mechanical ontology. Contemplative traditions–from a variety of religious traditions [6]–have been characterized by the recognition "that all phenomena are interconnected, share an "inter-being", are part of a, some would say, divine wholeness"

The new onto-epistemological situation we find ourselves in at the beginning of the 21st century requires new tools for inquiry. It requires tools that can enable us to inquire into a world from which we are not separated. The classical Newtonian paradigm that still mostly underpins our current educational institutions not only allowed us to bracket ourselves out of the situation of

[6] The category of "religion" in its current sense is derivative of the processes briefly alluded to in the first part of this paper. Before the scientific revolution, there was no sphere of knowledge completely outside of the category of religion. Most non Western traditions have not thus separated out a domain of religion from a secular domain.

inquiry, but positively required that we do so. So we were trained to forget ourselves and spend all our energies devising ever more refined methodologies for training our attention outward. The new onto-epistemological situation requires us to make the opposite journey and train our attention inward. Such a move furthermore is one that also nurtures an ethics of compassion toward not only other humans but toward the nonhuman world as well. Ethics seems to automatically return to inquiry once we train our attention inward. The first steps in this direction have already been taken, as the second part of this paper documents. They have begun to make a path on which many others will hopefully tread.

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