

Raimon Panikkar and the Union of Love and Knowledge: Quantum Mechanics and Compassion

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Introduction

For nearly a decade, I have had the privilege of intermittent contact with Father Raimon Panikkar. Rather than discuss the many ways his benevolence has influenced both my head and my heart, here I briefly discuss my last interaction with him.

In the summer of 2006, I was trying to finish my book on Tibetan Buddhism and modern physics. It was nearly finished, but some critical pieces were clearly missing. I felt stuck. I hoped that going to Spain and participating in the “The Vision of Reality in Science and Religion,” a Panikkar *Sangama* or coming together, would break the logjam. Thanks to the generosity of the Fetzer Institute, for five days we had a varied banquet of dialogues on science and religion while enjoying the beauty of the coast of northeastern Catalonia at the home of our gracious hostess, Milena Carrara. Figure 1 shows the fortunate participants, with Milena being the highest woman on the steps and Panikkar looking a little worn out by all the activity.



Figure 1: Panikkar’s Sangma

My most memorable event of that meeting occurred in Panikkar’s presentation, when he exhorted us to seek a union of love and knowledge. Of course, he did not tell us how to do this or what form such a union should take, but the idea began to grow inside me. It was clear he

meant that this union should permeate our understanding of reality and that it should affect us at the deepest levels of our being and thereby transform us. Figure 2 shows that despite health problems, Panikkar still displayed that extraordinary radiance that makes him such an inspired teacher, scholar, and priest.

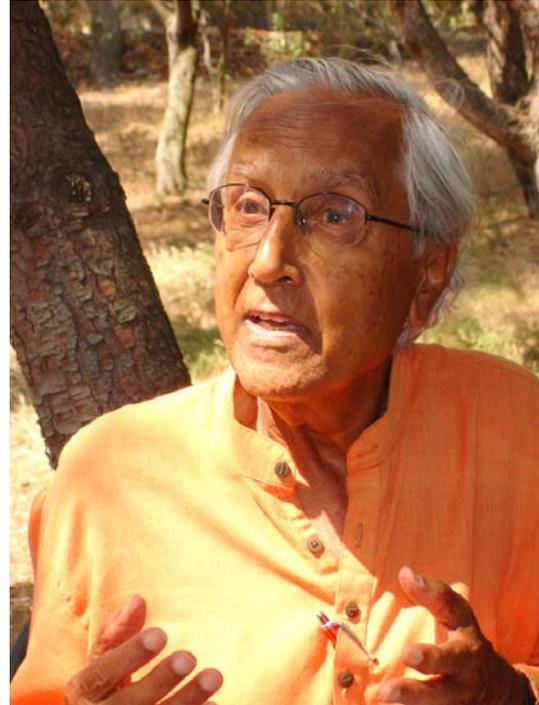


Figure 2: Ramon Panikkar, July '06

As the *sangama* ended, a restlessness gripped me that I could neither identify nor resolve. Fortunately, during the plane ride home, the pieces came together. Now my book is titled *Tibetan Buddhism and Modern Physics: Toward a Union of Love and Knowledge*.¹ I am not enough of a Panikkar scholar to analyze comprehensively how he has, within the vast corpus of his writings, implemented his own plea for a union of love and knowledge. However, one of his most recent major works, *Christophany: The Fullness of Man*,² places the union of love and knowledge at the core of the Christophanic experience, that nondual, transcultural realization of the meaning of Christ. Rather than follow Panikkar's unique approach, I sketch here a little of my attempt at uniting love and knowledge, within the context of the Buddhism and science dialogue. Here I highlight some of Panikkar's inspiration.

Emptiness and Compassion in Tibetan Buddhism

A dynamic synergy exists between emptiness and compassion the two great principles upon which the Middle Way Consequence School of Buddhism (abbreviated as Middle Way) is built. The Middle Way is the preeminent philosophical formulation of Tibetan Buddhism. Understanding our deepest nature as empty of independent existence and as interdependent intersections in the vast web of the universe naturally issues in compassionate action. Here we already see explicit connections between knowledge, or the truth of reality, and its expression in love and compassion. While the Middle Way understands all subjective and objective phenomena as empty of independent or inherent existence, phenomena do conventionally exist and function

precisely because of their interdependent relationships. This is very close to Panikkar's understanding of reality or truth as relational when he writes,

The nondualistic approach accepts the relativity of truth but not sheer relativism. This is to say, truth is constituted by the total relationship of things, because things are insofar as they are in relation to one another. But this relation is not a private relation between a subject and an object. It is a universal relationship so that it is not for any private individual or group to exhaust any relationship. Truth is relational, thus relational to me, but never private. There is no such thing as private truth. On the other hand, truth is not an immutable or absolute quality totally objectifiable in concepts or propositions independently of time, space, culture, and people.³

Panikkar states the same idea, but here focusing on the relational nature of the person when he writes,

We may describe the person as a knot in a web of relations. In such a perspective, individuality is no more than the abstract knot cut away from all the threads that contribute to make it up. The knot without the thread is nothing, and the threads without the knot could not subsist. Knots serve a very practical function; they provide effective ways for referring to human activity, from identification cards to the human rights of the individual. But a knot is a knot because it is made up of threads tied together with other knots by means of a network of threads. Although the knots are not unreal, neither are the threads. The network constitutes one great whole. However spatial and material this analogy is, it does show that no such thing as an individual knot exists and that all knots entail one another while retaining their unity. Reality is the net, and the net is relational.⁴

The Middle Way wholeheartedly concurs with the statement “that no such thing as an individual knot exists and that all knots entail one another while retaining their unity.” For Middle Way adherents, this relational view of reality imposes the moral obligation of universal compassion on us. If I totally lack independent existence and my deepest reality is solely of connections to others and the environment, then I am morally obligated to relieve the suffering of all sentient beings. In other words, universal compassion flows directly from the relational nature of truth or reality, from the profound interconnectedness of emptiness. We can deepen our realization of emptiness or our profound interconnectedness through both careful reasoning and concentrated meditation. An especially direct path to the realization of our dependent relatedness is through opening ourselves to the suffering of others. As I sketch below, this cultivation of empathy simultaneously ignites our compassion and deepens our realization of emptiness. In this way, emptiness and compassion strengthen each other and culminate in humane wisdom.

The chief obstacle to the realization of emptiness is our obstinate clinging to the belief in our independent existence, that we are an inherently existent “knot” independent of the connecting threads. Such a false belief blocks us from the wisdom of emptiness, solidifies our self-centeredness, prevents us from acting compassionately, and guarantees our suffering. One of the chief antidotes for this error is the exercise of exchanging self with other, a prime example of how Tibetans use the imagination for spiritual transformation.

Shantideva,⁵ the eighth-century Indian adept and one of the brightest lights in the firmament of Tibetan Buddhism, gives detailed instructions on how to exchange self with other. The exercise takes the following form.

Generally, we break up humanity into three groups: those people that we believe are inferior to us, those that we believe are equal to us, and therefore rivals, and finally those that we believe are superior to us. The basis for this grouping—whether spiritual attainment, education, money, or other criteria—varies from one person to the next. However, the threefold grouping nevertheless occurs. We feel haughty toward our inferiors in the first group, competitive toward our equals in the second, and envious of our superiors in the third. In this exercise, we start with the point of view of somebody in the group we believe to be inferior to us. We imaginatively exchange identities with that inferior person. We assume their point of view as much as possible, then gaze back at ourselves through their eyes with envy and criticize ourselves from their point of view.

Let me give an example of how this can be turned into a writing exercise appropriate for a professor. In our example, the professor thinks very highly of himself, his developed intellect, his ability to articulate and manipulate ideas, and so forth. Let us say he frequently deals with a secretary who gives him some trouble. Of course, he secretly believes that secretaries are a lesser form of life. Then implementing Shantideva’s exercise, our professor imaginatively takes on the secretary’s identity and writes out something like,

I have so much work. I can never get caught up and he (the professor) just keeps dumping it on my desk and complaining that I’m not fast enough. He’s never satisfied with either the quality or quantity of my work. I’m always so tense when I have to leave early to take care of one of my children when they’re ill or have to go to a doctor. On top of it all, he often makes disparaging remarks about women. But I need to pay my bills and must do my best with this job. He went to all those fancy schools and has had all the advantages that I never had. He’s arrogant, self-centered, and swollen with his own self-importance. He never takes the slightest notice of my

needs or appreciates anything I do. Despite all his education and academic honors, he knows nothing about simple kindness.

Of course, such a hopeless professor is unlikely to do this exercise, but I trust you get the general idea. In essence then, Shantideva is asking us to vividly take the point of view of somebody we feel is inferior to us and, from this position, generate jealousy and criticism toward ourselves. Depending upon whom you consider your inferior, you modify the exact words to generate the necessary jealousy and criticism toward yourself.

Next, we take the viewpoint of somebody we consider our equal or rival. From that person's viewpoint, we generate intense competitiveness and criticize ourselves from our rival's point of view.

Finally, we take the point of view of somebody we believe is our superior and, from that position, make some withering criticisms of our self, and promise to deny ourselves happiness. I discuss this exercise at considerable length in Chapter 2 of my new book. Here it is enough to note that this exercise has two main goals. First, through the exchange of self with other we weaken our view of ourselves as one special knot, as independently existent, and free of the threads of connections in the vast network of reality. Second, by seeing ourselves through the eyes of those three groups we refine our personality, and most importantly, cultivate a deep feeling connection to others. We develop empathy, the ability to identify with and understand another person's feelings—the very foundation of compassion and love.

In a very similar vein, Panikkar writes,

Love is neither equality nor otherness, neither one nor two. Love requires differentiation without separation; it is a "going" toward "the other" that rebounds in a genuine "entering" into oneself by accepting the other within one's bosom.

Without love, we may be capable of "identifying" an object to a certain extent, of localizing it, of describing its aspects and foreseeing its behavior. This is so-called scientific knowledge—which is not knowledge in the classical sense. In our case, however, we aim not at an identification of the object but at knowledge of a "thou" who is himself a knowing subject. In order to accomplish this end, I must know myself in such a way that there is space for "the other," so that the other is not only someone "outside" but a certain "other-than-me," and "other self"—who perhaps, like me, participates in a unique "Self."⁶

Through such reflections and exercises such as the exchange of self with other, I "accept the other within my bosom" and learn to see myself through her eyes. I break out of my narcis-

sistic isolation, affirm our deep relatedness, and develop love and compassion. This is not compassion for just those easy to love such as family or friends, but for all sentient beings. Here is the Middle Way expression of Christ's injunction to "Love your enemies" (Matthew 5:43-44).

Of course, universal compassion or *agape* is central to Christianity. For example, the two greatest commandments (Matthew 22:37-41) involve loving God and our neighbors, while Corinthians 13:1-8 makes an explicit connection between love as *agape* and knowledge. A modern invocation of this idea came in a sermon in 1956 by Martin Luther King when he used the literary device of imagining a letter written by St. Paul to the Americans. King's formulation has special relevance for academics. He said,

So American Christians, you may master the intricacies of the English language. You may possess all of the eloquence of articulate speech. But even if you "speak with the tongues of man and angels, and have not love, you are become as sounding brass, or a tinkling cymbal."

You may have the gift of prophecy and understanding all mysteries. You may be able to break into the storehouse of nature and bring out many insights that men never dreamed were there. You may ascend to the heights of academic achievement, so that you will have all knowledge. You may boast of your great institutions of learning and the boundless extent of your degrees. But all of this amounts to absolutely nothing devoid of love.⁷

Emptiness and Quantum Nonlocality

As I will show, there is an extraordinarily precise resonance between Middle Way emptiness and quantum nonlocality, the most important finding at the conceptual foundations of modern physics.⁸ Thus, if we can understand the deep connection between emptiness and the foundations of modern physics then, since emptiness leads to compassion, we can see that physics indirectly points toward love. Since physics powerfully shapes our modern worldview and thereby influences our actions, gaining a greater appreciation for these connections encourages universal compassion. Moreover, a feeling connection towards the suffering of others naturally leads to a deeper appreciation for the interdependence mirrored in quantum mechanics and emptiness. In this way, love then leads to knowledge.

Let us begin exploring these parallels by turning to classical or Newtonian physics, which unfortunately continues to dominate our modern worldview. Newton envisioned the universe as built from independently or inherently existent point particles. He understood separate entities as existing in their own right and only secondarily coming together to build arbitrary complex struc-

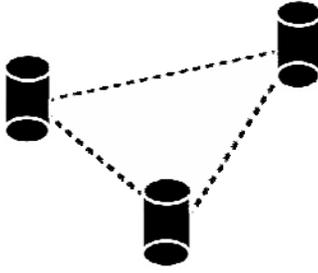


Figure 3: Classical Posts

tures. Figure 3 illustrates this classical view of entities regardless of whether they are atomic particles or human beings. In the diagram, the entities are substantial things with the solidity of iron posts. The posts' relationships to each other are noted by dashed lines because in the classical view these relationships are less real and less substantial than the posts themselves. If classical particles could speak they would say something like, "My independent existence is primary.

My relationships to other objects are secondary." In Panikkar's net analogy, this is taking the knot as existing independent of the connecting threads.

Quantum mechanics is undeniably the best theory in the history of science. Despite that, its findings are much less influential than they should be for shaping our modern worldview. However, during the last several decades, quantum mechanics has revealed that the relationships between quantum entities are often more important and real than their isolated existence as distinct, separate entities.

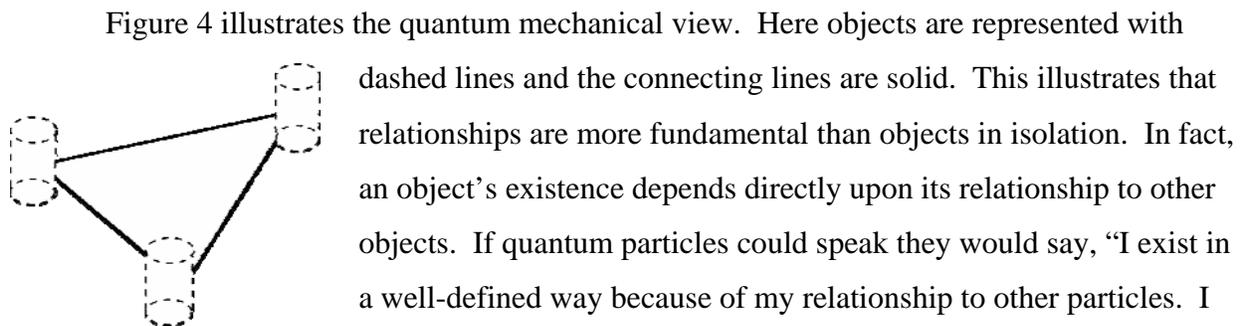


Figure 4: Quantum Posts

Figure 4 illustrates the quantum mechanical view. Here objects are represented with dashed lines and the connecting lines are solid. This illustrates that relationships are more fundamental than objects in isolation. In fact, an object's existence depends directly upon its relationship to other objects. If quantum particles could speak they would say, "I exist in a well-defined way because of my relationship to other particles. I have no independent existence." ("But a knot is a knot because it is made up of threads tied together with other knots by means of a network of threads.")

Physicists rarely discuss how physics shapes our worldview and influences our culture. A notable exception is the late David Bohm, internationally known for his important contributions on the foundations of quantum mechanics. Bohm writes:

It is proposed that the widespread and pervasive distinctions between people (race, nation, family, profession, etc.), which are now preventing mankind from working together for the common good, and indeed, even for survival, have one of the key factors of their origin in a kind of thought that treats things as inherently divided, disconnected, and "broken up" into yet smaller constituent parts. Each part is considered to be essentially independent and self-existent.⁹

Quantum nonlocality—the inability to localize a particle in a finite region of space—differs radically from the assertion that “each part is essentially independent and self-existent.” The most penetrating understanding of quantum nonlocality comes from the celebrated Bell’s Inequalities,¹⁰ which analyze correlated pairs of particles. The term “correlation” here is used in the sense that two gloves or two shoes comprising a pair are correlated. The analysis of Bell’s Inequality is independent of the current formulation of quantum mechanics and therefore any future theory that might eventually replace quantum mechanics must embody this principle of nonlocality. Thus, nonlocality is not an artifact of quantum mechanics but a fundamental property of nature.

The Bell Inequality analysis has its origin in the famous paper by Einstein, Podolsky, and Rosen¹¹ (EPR), which considered correlations between pairs of widely separated particles. Although Einstein pioneered quantum mechanics, he was never happy with the theory. From the 1920’s to 1935, when EPR was published, he engaged in a number of debates with the physicist Niels Bohr about the conceptual foundations of quantum mechanics.¹² Many physicists consider these Einstein-Bohr debates to be the most thrilling and important discussions in science, on a par with the debate that raged around Galileo over the structure of the solar system.



Figure 5: Niels Bohr and Albert Einstein

Despite the decades-long running disagreements between Bohr and Einstein about physics' fundamental principles, they always shared the greatest respect and affection for each other. Their discussions are an example of the kind of dialogue that Panikkar has championed for so long. For example, after their first meeting in April 1920, Einstein wrote Bohr, "Not often in life has a person, by his mere presence, given me such joy as you did. I am now studying your great papers and in so doing—especially when I get stuck somewhere—I have the pleasure of seeing your youthful face before me, smiling and explaining. I have learned much from you, especially also about your attitude regarding scientific matters."

Bohr then replied, "To me it was one of the greatest experiences ever to meet and talk with you. I cannot express how grateful I am for all the friendliness with which you met me on my visit to Berlin. You cannot know how great a stimulus it was for me to have the long hoped for opportunity to hear your views on the questions that have occupied me. I shall never forget our talks."¹³

We can go right to the heart of the controversy by examining Einstein's most explicit formulation of his position. Here we see his commitment to the classical view in Figure 3.

If one asks what is the characteristic of the realm of physical ideas independently of the quantum-theory, then above all the following attracts our attention: the concepts of physics refer to a real external world, i.e., ideas are posited of things that claim a "real existence" independent of the perceiving subject (bodies, fields, etc.) . . . it is characteristic of these things that they are conceived of as being arranged in a space-time continuum. Further, it appears to be essential for this arrangement of things introduced in physics that, at a specific time, these things claim an existence independent of one another, in so far as these things "lie in different parts of space." Without such an assumption of the mutually independent existence (the "being-thus") of spatially distant things, an assumption which originates in everyday thought, physical thought in the sense familiar to us would not be possible. Nor does one see how physical laws could be formulated and tested without such a clean separation. Field theory [the theory of electromagnetic or gravitational fields, for example] has carried out this principle to the extreme, in that it localizes within infinitely small (four-dimensional) space-elements the elementary things existing independently of one another that it takes as basic, as well as the elementary laws it postulates for them.

For the relative independence of spatially distant things (A and B), this idea is characteristic: an external influence on A has no immediate effect on B; this is known as the "principle of local action," which is applied consistently only in field theory.¹⁴

What Einstein means by “local action” is that the velocity of light is the maximum transmission speed for any information or physical effect to occur. Since light speed is finite, there can be “no immediate effect” of a particle in region A on another particle in region B, or vice versa. Therefore, the EPR/Bell experiments use locality to isolate each particle in the pair.

Einstein’s reference to “mutually independent existence of spatially distant things” is also called Einstein Separability. Objects separated in space and free from any interaction with other objects must exist independently or have well-defined, intrinsic properties. Relationships between objects are then built upon this fundamental independent existence; however, the relationships themselves in this view are less fundamental than the “mutually independent existence” of the related entities.

Einstein believes the separability principle “originates in everyday thought.” It is true that the vast majority of people believe that objects free of interaction with other objects have an independent existence. This seems like an obvious truth for us and so it was for Einstein. If this “mutually independent existence” were absent then “physical thought in the sense familiar to us would not be possible.” In addition, Einstein claims that things have a “‘real existence’ independent of the perceiving subject.” Briefly, this means he assumes objects have two essential properties: first, they have mutually independent existence and, second, they are independent of our knowing.

Einstein’s two assumptions are precisely a belief in independent or inherent existence, which is exactly what Middle Way emptiness denies for all subjects and objects. Einstein is doing us a favor by carefully defining specifically what emptiness denies: inherent or independent existence.

Deriving the Bell Inequalities only requires assuming locality (local action) and mutually independent existence. Physicists are fully confident that nature embodies locality. Therefore, the experimental violation of the Inequalities—which today students can demonstrate in an undergraduate lab—conclusively shows that the correlated particles do not have mutually independent existence. Instead, as quantum mechanics implies, nature is nonlocally interconnected. Therefore, despite Einstein’s objections, *what happens in region A is instantaneously influenced by what happens in region B, regardless of the distance between A and B.*

The Inequalities’ analysis, however, does not replace our erroneous view of objects as having independent existence with some new principle. Just as in traditional Middle Way argu-

ments establishing emptiness, there is a massive negation of independent existence without invoking a deeper reality beyond nonlocality.

The correlated particles are instantaneously interconnected in ways inconceivable if we rely solely on ideas from classical physics. We are so used to conceiving of a world of isolated and independently existing objects that it is difficult to appreciate this rigorous experimental refutation of independent existence. Therefore, we find the very nature of reality demanding a major paradigm shift at the foundations of science and philosophy—one with enormous implications for fields well beyond the boundaries of science and philosophy.

In the David Bohm quote cited above, he suggests that a key factor giving rise to the pervasive strife between peoples and nations is “a kind of thought that treats things as inherently divided, disconnected . . . [where] each part is considered to be essentially independent and self-existent.” Bohm is identifying the classical view of reality as a cause for conflict whereas we have just seen that quantum nonlocality teaches just the opposite. Let me elaborate by turning to the Middle Way.

In Middle Way Buddhism, the realization of emptiness—the complete lack of independent existence in all subjects and objects and their profound interdependence with each other and the world—decreases egotism and increases a genuine concern for all life. If I truly lack independent existence, if my deepest reality is one of mutual dependence upon other life forms and my environment, how can I be concerned with just me? How can I focus only on the needs of simply one intersection, or one knot, among the innumerable dependency relations that define all people and things? Of course, we have no rational justification for our self-centeredness and self-cherishing. Nevertheless, these firmly ingrained tendencies are painfully difficult to uproot.

The greatest obstacle for appreciating emptiness is our inveterate and unconscious belief in the independent or inherent existence of our own egos. Practicing compassion weakens this false belief that blocks the doorway to the wisdom of emptiness. Thus, if we can truly practice compassion, if we can show a genuine concern for both our fellow humans and the environment, then our understanding of emptiness and the implications of its far-reaching interconnectedness with all of life must grow. In this way, the Middle Way’s two pillars have a synergistic relationship and encourage us to be responsible for the welfare of all sentient beings and the environment.

I have always wanted to understand more deeply the connection between compassion and emptiness. I actually wanted to derive compassion from emptiness, to see how it flows logically from the lack of inherent existence, like a result in physics. Perhaps my years of doing theoretical physics predispose me to this approach. Emptiness certainly implies compassion. Nevertheless, it was never satisfying to derive compassion from intellectual analysis alone.

Fortunately, life has shown me a little about approaching compassion through the heart. It has shown me how to take in the pain of other people and thereby make a deep feeling connection to them. In doing so I become more open to them and the reality of their suffering. In this way, instead of approaching compassion through emptiness or nonlocality, I try to open up to the suffering of others and thereby assimilate my profound interconnections with them. The ultimate goal is to expand this openness to include all suffering beings. Such openness to the suffering of others softens my habitual focus on my ego and its needs. The connection is through the heart not through the head. This leads to a feeling realization of emptiness. I then appreciate how connections to others establishes my own identity and how without these relationships there is no me at all. Here is a short personal experience from a couple of years ago to convey what I mean.

The Thief as Guru

I am traveling for several weeks in Europe giving lectures and workshops. Despite the terrific extroversion of such activities, I am enjoying the periods of isolation and introversion that travel provides. I have finished reading the books I brought from home, so in a London airport I purchase *Ethics for the New Millennium* by the Dalai Lama. Although I have heard all of these ideas before, both through reading and oral instruction, the book's direct, clear, and simple message inspires me. With a minimum of technical language, the Dalai Lama shows how our happiness and genuine ethics follow from our effort to alleviate suffering. The root of all ethical action must be our sincere effort to reduce suffering. These well-known ideas have been electrifying me for the last couple of days. I continue to read the book during a short visit to Panikkar in Tavertet, Catalonia. He further stimulates my ruminations on the alleviation of suffering as the root of ethics.

From Tavertet, I return to the Barcelona airport. There, after about an hour of reading, I stretch my legs with a walk among the fancy shops. I continue to reflect on these ideas as I re-

turn to the departure gate. On my way toward the departing line, I sincerely vow to work more intensely on practicing compassion. I tell myself, "I can surely do much better."

Suddenly, out of the corner of my eye, I see a fearsome fist fight about 20 meters from my departure line. A policeman and another man are furiously pummeling each other. The policeman is on the floor and getting the worst of it. I instantly decide that this is harming the other man even more than the policeman. I sprint to the fight. I grab the man by the shoulders and pull hard, but I cannot separate them. In desperation, I come up behind the man, wrap my right arm over his right shoulder, grasp his left arm, and give a mighty heave. As the two men separate, the man pinned against my chest gives a powerful two-legged thrust to the policeman's chest knocking off his badge and throwing him flat on his back. The man and I land in a heap with me on my back and him on top of me.

I hug him tightly to my chest, while we struggle awkwardly to a sitting position. He is breathing like a racehorse. His heart is pounding. I feel his beard stubble against my left jaw. Astonishingly, the policeman jumps up and runs to the far end of the terminal and telephones for help. I am very unhappy being left clutching the fighter, but soon other people come to restrain him. I say to him with surprising tenderness, "Just let it go. It is not worth it." These seem like strangely ineffective words, especially since he is unlikely to understand English. I notice that he is about thirty years old, the same age as my oldest son.

In a few minutes, more police arrive and handcuff the man. I get up from the floor and return to the departure line. My tailbone is sore from landing on it. Somebody hands me the Dalai Lama book that had fallen on the floor early in the struggle. As I walk back to the line I think, "The cop didn't even say 'Gracias.'"

Standing in line, a deep sadness overwhelms me. I have to fight the desire to sob uncontrollably. Embarrassed to cry in the departure line, I ask myself, "What is this powerful sadness?" Somebody ahead of me in the line tells me that the policeman caught the man picking somebody's pocket.

That overwhelming sadness has long mystified me. At first, I thought my sadness was due to the policeman not recognizing or appreciating my effort. "I risked physical harm to minimize the pounding that policeman was taking. I want at least a 'Thank you.'" Even more, it embarrasses me to confess my desire to be lionized as a hero. Realizing that my motivation was not entirely pure grieves me, especially when in the book that was just inspiring me the Dalai Lama

writes, “When we give with the underlying motive of inflating the image others have of us—to gain renown and have them think of us as virtuous or holy—we defile the act. In that case, what we are practicing is not generosity but self-aggrandizement.”¹⁵

My motivation was not entirely pure, but there surely is more to it. When I clutched that man in my arms, besides feeling his heart beating wildly, his gasping breath, and even the scratch of his whiskers, I also felt his suffering. A genuine tenderness welled up in me towards him. More than physical intimacy, I directly contacted the broken life that led to the event, a brokenness that was likely to continue well after the prison term that was sure to follow. It is one thing to reflect quietly on suffering while reading a book and another to feel it squirming against your body. I did not have to think about nonlocality in quantum mechanics to make a connection with this man. I only had to be open to his suffering. The Dalai Lama writes,

When we enhance our sensitivity toward others’ suffering through deliberately opening ourselves up to it, it is believed that we can gradually extend our compassion to the point where the individual feels so moved by even the subtlest suffering of others that they come to have an overwhelming sense of responsibility toward those others. This causes the one who is compassionate to dedicate themselves entirely to helping others overcome both their suffering and the causes of their suffering. In Tibetan, this ultimate level of attainment is called *nying je chenmo*, literally “great compassion.”¹⁶

I certainly have not attained anything like the advanced level of *nying je chenmo*, but I have seen how opening, even unwittingly, toward the suffering of others makes me appreciate the profound interconnectedness we all share. Such appreciation through the heart complements the intellectual apprehension of quantum nonlocality and emptiness. That man, accused of being a pickpocket, could have been my son. As much as Einstein and Bohr educated my intellectual understanding, he educated my heart. Fortunately, Father Panikkar has helped educate both my head and my heart and move me toward a union of love and knowledge.

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- ¹ Victor Mansfield, *Tibetan Buddhism and Modern Physics: Toward a Union of Love and Knowledge* (to be published the Templeton Foundation Press in 2008).
- ² Raimon Panikkar, *Christophany: The Fullness of Man* (Maryknoll, NY: Orbis Books, 2004), especially Chapter 2.
- ³ Raimon Panikkar, “Religious Pluralism: The Metaphysical Challenge” in *Religious Pluralism (Boston University Studies in Philosophy and Religion, Vol. 5)* edit. Leroy S. Rouner (South Bend, IN: University of Notre Dame Press, 1984), p. 114.
- ⁴ Panikkar, *Christophany*, p. 61.
- ⁵ Shantideva, *A Guide to the Bodhisattva’s Way of Life* translated by Stephen Batchelor (Dharamsala, India: Library of Tibetan Works & Archives, 1979).
- ⁶ Panikkar, *Christophany*, pp. 57-8.
- ⁷ Martin Luther King, *Knock at Midnight, Inspiration from the Great Sermons of Reverend Martin Luther King, Jr.* (New York: Hachette Audio, 2005) CD 1.
- ⁸ Chapter 4 in my *Tibetan Buddhism and Modern Physics* deeply influences this paper.
- ⁹ David Bohm, *Wholeness and the Implicate Order* (London: Routledge & Kegan Paul, 1983), p xi.
- ¹⁰ J. S. Bell, “On the Einstein Podolsky Rosen paradox,” *Physics*, 1:195, 1964; Alain Aspect, Jean Dalibard, and Gérard Roger, “Experimental Test of Bell’s Inequalities Using Time Varying Analyzers,” *Physical Review Letters*, 49:1804, 1982; W. Tittel, H. Brendel, J. and Zbinden, and N. Gisin, “Violation of Bell inequalities by photons more than 10 km apart,” *Physical Review Letters*, 81:3563–3566, 1998; M. A. Rowe, D. Kielpinski, V. Meyer, C. A. Sackett, W. M. Itano, C. Monroe, and D. J. Wineland, “Experimental violation of a Bell’s inequality with efficient detection,” *Nature*, 409:791–794, 2001.
- ¹¹ Albert Einstein, B. Podolsky, and N. Rosen, “Can Quantum-mechanical Descriptions of Physical Reality be Considered Complete?” *Physical Review*, 47:777, 1935.
- ¹² John A. Wheeler, Wojciech H. Zurek, *Quantum Theory and Measurement* (Princeton, NJ: Princeton University Press, 1983) give a detailed account of these debates along with reprints of all the key papers.
- ¹³ Abraham Pais, *Einstein Lived Here* (New York: Oxford University Press, 1994) p. 40.
- ¹⁴ Albert Einstein, “Einstein on Locality and Separability,” (1949) trans. Donald Howard, *Studies in History and Philosophy of Science*, 16, 3 (1985): 187-8.
- ¹⁵ Tenzin Gyatso, *Ancient Wisdom, Modern World: Ethics for the New Millennium* (London, England: Little, Brown and Company (Abacus), 2001) p. 118.
- ¹⁶ *Ibid.* p. 128.