Cognitive-Affective Connections in Teaching and Learning: The Relationship Between Love and Knowledge¹

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When the German poet Goethe declared, "In all things we learn only from those we love," he was speaking directly to the profound connection between cognition and affection. We are especially open to and receptive towards one we love. We are more likely to remember the words of a beloved mentor and to ruminate on them long after they were spoken. Teachings go deep when carried into the human being by deep affection; they can change us, teach us even to see the world differently. I have grown increasingly convinced of the importance of the connection between cognition and affection, or to state it more clearly, the crucial relationship between love and knowledge.

First, a personal remark: as a scientist, any attempt to relate knowledge to love feels like an enormous breach of etiquette; it is very bad form, especially so in a public setting such as this. But I have come to conclude that the fear I have felt when broaching this topic was based on particular institutional forms and forces that have ultimately worked against our fundamental human interests. So please join me in setting aside your suspicions and hesitancies and explore with me the possible relationship between knowledge and love especially as they meet in contemplative inquiry.

If I were to ask: What should be at the center of our teaching and our students' learning, how would you respond? Of the many tasks that we as educators take up, what, in your view, is the most important task of all? What is our greatest hope for the young people we teach? In his letters to the young poet Franz Kappus, Rainer Maria Rilke (1954) answered unequivocally:

To take love seriously and to bear and to learn it like a task, this is what [young] people need....For one human being to love another, that is perhaps the most difficult of all our tasks, the ultimate, the last test and proof, the work for which all other work is but a preparation. For this reason young people, who are beginners in everything, cannot yet know love, they have to learn it. With their whole being, with all their forces, gathered close about their lonely, timid, upward-beating heart, they must learn to love. (p. 41)

Need I say it? The curricula offered by our institutions of higher education have largely neglected this central, if profoundly difficult task of learning to love, which is also the task of learning to live in true peace and harmony with others and with nature.

We are well-practiced at educating the mind for critical reasoning, critical writing, and critical speaking, as well as for scientific and quantitative analysis. But is this sufficient? In a world beset with conflicts, internal as well as external, isn't it of equal if not greater importance to balance the sharpening of our intellects with the systematic cultivation of our hearts? Do not the issues of social justice, the environment, and peace education all demand greater attention and a more central place in our universities and colleges? Yes, certainly...

Although this is undoubtedly true, my presentation will not address the issue of balancing intellectual accomplishment with good works. Rather what I would like to suggest is that knowing itself remains partial and deformed if we do not develop and practice an epistemology

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of love instead of an epistemology of separation. Harvard's motto is *Veritas* or Truth. Knowing is, in this view, the central project of higher education. I maintain, however, that truth itself—*veritas* itself—eludes us if we bring to the world and to each other an epistemology of separation only. Our conventional epistemology hands us a dangerous counterfeit in truth's place, one that may pass for truth, but in fact is partial and impoverished.

In a talk at Berea College, Parker Palmer (1993) pointed out that "every way of knowing becomes a way of living...every epistemology becomes an ethic" (para. 4). He argued that the current epistemology has spawned an associated ethic of violence. Surely, science has brought enormous advances, but we cannot turn away from the central fact that the modern emphasis on objectification predisposes us to an instrumental and manipulative way of being in the world. As Parker suggested in Berea, our way of knowing does, indeed, grow into a way of living. The implications of this position are large. While I am emphatically not calling for a roll-back of science, I am calling for resituating it within a greater vision of what knowing and living are really all about. That re-imagination of knowing will have deep consequences for education, consequences that give a prominent place to contemplative pedagogies. Indeed, I hope to convince you that contemplative practice can become contemplative inquiry, which is the practice of an epistemology of love. Such contemplative inquiry not only yields insight (veritas) but also transforms the knower through his or her intimate (one could say loving) participation in the subject of one's contemplative attention. Contemplative education is transformative education. Although Jack Mezirow's (2000) foundational research on transformative education was concerned with critical reflection, not contemplation, I see his work and that of such theorists as Robert Kegan (1982, 1994) as offering a highly appropriate academic lineage within which to understand contemplative pedagogies.

In the remainder of my time I first propose to sketch the contours of an epistemology of intimacy and participation, that is, an epistemology of love, which extends scientific and scholarly inquiry in ways that need not be viewed as problematic to academic teaching or to our research disciplines. I would then like to describe some of the main elements of a course I have taught with an art historian, Joel Upton, at Amherst College. Entitled "Eros and Insight," it attempts to embody something of this way of knowing, and to take up the challenge Rilke presents to us all: the challenge of learning to love.

An Epistemology of Love

Ironically, I believe that we first need to recognize and accept as part of our existential reality the separation or solitude we experience. We do, indeed, feel disconnected from each other, and also from the natural world around us.

The spiritual philosopher Rudolf Steiner (1995) thought Einsamkeit or solitude was the "main characteristic of our age" (p. 94). His contemporary Rilke (1954) put it more forcefully:

To speak of solitude again, it becomes always clearer that this is at bottom not something that one can take or leave. We *are* solitary. We may delude ourselves and act as though this were not so. That is all. But how much better it is to realize that we are so, yes, even to begin by assuming it. (p. 50)

I view the scientific stance as a symptom of this more general psychological and spiritual malaise. Solitude is the mirror side or inevitable correlate of an increasingly strong development of self and personal identity. As individuals separate from ethnic groups, and as women gradually become authentic individuals, so also does the force and comfort of the collective diminish. Our search for individual identity has the accompanying downside that we dis-identify with other people, groups, and with nature.

While much has been gained through this process of individuation, achievements which we should not lose, if left to go on indefinitely, we logically end up with a society of selfish monads. I am convinced that the countervailing force to such fragmentation is not mutual self-interest or rational economic action that maximizes utility (as economists would have it); rather I believe that genuine empathetic relationships can be and are established between and among us. Increasingly these connections are not between tribes or ethnic and religious groups; they are between individuals. Healthy human relationships do not happen automatically; each of us must cultivate them intentionally. Nothing in this realm is given for free.

The same logic hold true for our relationship to the environment. We no longer grow up on the farm, intimate with the ways of weather, plants, and animals. Our relationship to nature must likewise be intentional. The practice of contemplation is an important part of that intentional stance, one which can lead to sustained empathetic relationships.

Having made the intentional turn from isolation to empathetic connection, we are prepared for a contemplative way of knowing, one whose relationship to love will, I think, grow increasingly obvious. What are the features or stages of contemplative inquiry?

• Respect - When approaching the object of our contemplative attention, we do so with respect and restraint. Concerning the relationship to the beloved, Rilke (1975) maintained that "a togetherness between two people is an impossibility" (p. 28). Instead of an easy fusion with the beloved, Rilke (1954) insisted that "love consists in this, that two solitudes protect and border and salute each other" (p. 45). Likewise, I feel

that the first stage of contemplative inquiry is to respect the integrity of the other, to stand guard over its nature, over its solitude, whether the other is a poem, a novel, a phenomenon of nature, or the person sitting before us. We need to allow it to speak its truth without our projection or correction.

- Gentleness Contemplative inquiry is gentle or delicate. In his own scientific investigations, Goethe (1988a) sought to practice what he called a "gentle empiricism (zarte Empirie)" (p. 307). If we wish to approach the object of our attention without distorting it, then we must be gentle. By contrast, the empiricism of Francis Bacon spoke of extracting nature's secrets under extreme conditions, of putting her to the rack.
- Intimacy Conventional science distances itself from nature and, to use Erwin Schrödinger's (1967) term, objectifies nature. Ideally, science disengages itself from phenomena for the sake of objectivity. Contemplative inquiry, by contrast, approaches the phenomenon, delicately and respectfully, but it does nonetheless seek to become intimate with that to which it attends. One can still retain clarity and balanced judgment close-up, if we remember to exercise restraint and gentleness.
- Vulnerability In order to know, we must open ourselves to the other. In order to move with and be influenced, we must be confident enough to be vulnerable, secure enough to resign ourselves to the course of things. A dominating arrogance will not serve.
 We must learn to be comfortable with not knowing, with ambiguity and uncertainty. Only from what may appear to be weakness and ignorance can the new and unknown arise.
- Participation Gentle and vulnerable intimacy leads to participation by the contemplative inquirer in the unfolding phenomenon before one. Outer characteristics invite us to go deeper. We move and feel with the natural phenomenon, text, painting, or person before us; living out of ourselves and into the other. Respectfully and delicately, in meditation we join with the other, while maintaining full awareness and clarity of mind. In other words, contemplative inquiry is experientially centered in the other, not in ourselves. Our usual preoccupations, fears, and cravings work against authentic participation.
- Transformation The last two characteristics, participation and vulnerability, lead to a patterning of ourselves on the other. What was outside us is now internalized. Inwardly we assume the shape, dynamic, and meaning of the contemplative object. We are, in a

- word, transformed by contemplative experience in accord with the object of contemplation.
- Bildung Education as formation. The individual develops, or we could say is sculpted through contemplative practice. In German education is both Erziehung and Bildung. The latter stems from the root meaning "to form." The lineage of education as formation dates back at least as far as the Greeks. In his book What is Ancient Philosophy?, the French philosopher Pierre Hadot (2002) writes of the ancient philosopher, "the goal was to develop a habitus, or new capacity to judge or criticize, and to transform-that is, to change people's way of living and seeing the world" (p. 274). Simplicius asked, "What place shall the philosopher occupy in the city? That of a sculptor of men" (p. xiii). Or as Merleau-Ponty (1962) put it, we need to relearn how to see the world. In an essay on science, Goethe (1988b) declared that, "every object well-contemplated creates an organ of perception in us" (p. 39). Parker Palmer's important work also centers on education as formation.
- Insight The ultimate result of contemplative engagement as outlined here is organ formation, which leads to insight born of an intimate participation in the course of things. In Buddhist epistemology this was called "direct perception," among the Greeks it was called episteme, and was contrasted to inferential reasoning or dianoia. Knowing of this type is experienced as a kind of seeing, beholding, or direct apprehension, rather than as an intellectual reasoning to a result (Sloan, 1993; Sternberg & Davidson, 1995).

In the interest of time, I must leave aside the important issue concerning the confirmation of insight by various means: experimental, logical consistency, or other methods. In philosophy of science this is sometimes termed the difference between the context of discovery versus the context of proof.

Finally, contemplative inquiry is neither dispassionate analysis nor disembodied asceticism. Throughout all its stages there moves a lively, open excitement, a calm Eros that animates our interest and keeps us attentive and engaged.

To help us understand the features of contemplative inquiry, I would like to use two citations, one from Goethe (1988a), a second from Emerson. Goethe wrote, "There is a delicate empiricism which makes itself utterly identical with the object, thereby becoming true theory. But this enhancement of our mental powers belongs to a highly evolved age" (p. 307). In this passage Goethe highlights for us several features of contemplative learning. First, it is

experiential learning. What Goethe terms a "delicate empiricism" is also deeply participatory; it makes "itself utterly identical with the object" (p. 307). Theory (from the Greek root meaning "to behold") is not understood here as ratiocination, as deductive logic, but as I have already stated, as a high form of seeing, what Goethe elsewhere terms "aperçu." We know by virtue of connection, not disconnection, because we are identical with the object of our attention. Goethe fully recognizes that such non-dual awareness is far distant from where we begin, but education is concerned with precisely the enhancement of our mental powers in this direction, with the journey from blindness to seeing.

The second citation comes from Emerson's (1926) essay, "The Poet," where he writes,

This insight, which expresses itself by what is called Imagination, is a very high sort of seeing, which does not come by study, but by the intellect being where and what it sees, by sharing the path, or circuit of things through forms, and so making them translucid to others. The path of things is silent. Will they suffer a speaker to go with them? A spy they will not suffer; a lover, a poet, is the transcendency of their own nature—him they will suffer. The condition of true naming, on the poet's part, is his resigning himself to the divine aura which breathes through forms, and accompanying that. (pp. 278-279)

In Emerson's universe, the poet is a lover who is capable of "resigning himself" to that which breathes through the forms of nature. He possesses what I have called the capacity for vulnerability, which leads to insight as a high form of seeing called Imagination. In this way the poet distinguishes himself from the spy, and nature consequently permits the poet to give voice to her nature: true naming.

Contemplative insights are as much a part of science as the arts. The Irish mathematician William Rowan Hamilton's sudden discovery of *quaternions* (which are a step beyond imaginary and complex numbers), while walking across the Brougham Bridge in Dublin, was the fruit of long contemplative uncertainty.³ The insight passed into him like

an electric current, to use his own metaphor. It was an electrifying moment causing him to quickly turn aside and carve the key mathematical identities into the bridge railing. Likewise with the young Werner Heisenberg's discovery of the quantum uncertainty relations in 1927 while ill in Denmark. His passionate engagement with the theme of complementarity intensified while visiting his spiritual father Niels Bohr, but it finally culminated while Bohr was on a skiing vacation and Heisenberg was alone and feverish. The "context of discovery" is a contemplative context that is full of passion and sustained uncertainty. The conditions required for intuitive insight are quite different than the subsequent dispassionate, logical testing of it. The "context of proof" does indeed require careful assessment of insights against the data of experiments and the logic of mathematics. But the new insights of science enter as the fruit of contemplative gestation, not deductive analysis. As Emerson (as cited in Obuchowski, Jr., 1969) reminds us, "All becomes poetry when we look from within... because poetry is science, is the breath of the same spirit by which nature lives. And never did any science originate, but by a poetic perception" (p. 47).

Eros and Insight

The art historian Joel Upton and I have twice taught a course at Amherst College that attempts to explore the relations between love, knowledge, and contemplation. The course is secular with little reference to techniques of meditation that are taken from religious tradition. The class is composed of 30 first-year students from surprisingly diverse backgrounds, racially and economically.⁴

Academy-I was walking in to attend and preside, and your mother was walking with me, along the Royal Canal, to which she had perhaps driven; and although she talked with me now and then, yet an under-current of thought was going on in my mind, which gave at last a result, whereof it is not too much to say that I felt at once the importance. An electric circuit seemed to close; and a spark flashed forth, the herald (as I foresaw, immediately) of many long years to come of definitely directed thought and work, by myself if spared, and at all events on the part of others, if I should even be allowed to live long enough distinctly to communicate the discovery. Nor could I resist the impulse—unphilosophical as it may have been—to cut with a knife on a stone of Brougham Bridge, as we passed it, the fundamental formula with the symbols, i, j, k; namely, $i^2 = j^2 = k^2 = ijk = -1$ which contains the Solution of the Problem." Letter of Hamilton's: http://www.maths.tcd.ie/pub/HistMath/People/Hamilton/Lett ers/BroomeBridge.html

⁴ For further details on the course, see the article "Eros and Insight" in Amherst Magazine, and the associated web links, www.amherst.edu/magazine/issues/04spring/. Also see my article in Liberal Education, "Spirituality in Higher Education: Overcoming the Divide" (Winter, 2003), pp. 50-58.

² Goethe in a letter to Soret of December 30, 1823, quoted by Rike Wankmüller, *Goethes Schriften*, Hamburger Ausgabe, Munich: Verlag C.H. Beck. vol. 13, p. 616. "In science, however, the treatment is null, and all efficacy lies in the apercu."

³ "Every morning in the early part of the above-cited month [October], on my coming down to breakfast, your (then) little brother William Edwin, and yourself, used to ask me, "Well, Papa, can you *multiply* triplets?" Whereto I was always obliged to reply, with a sad shake of the head: "No, I can only *add* and *subtract* them." But on the 16th day of the same month - which happened to be a Monday, and a Council day of the Royal Irish

We learned from experience to start with the knowledge pole of the course. Discussions concerning love require trust as well as sophistication, both of which take time to engender in a class. We adopted a slow, more reflective pace for the course. Readings were short and powerful; we asked students to spend time with them and appreciate their force. Papers were very brief (one page, except for the final paper which was longer), and we required the students to turn in three drafts. Directly and indirectly, we asked them to live the class materials, all of it: the readings, the lectures, our many conversations, the meditations, and their writing. Step-by-step, and one-by-one, we asked them to become increasingly vulnerable to the content of the course and to participate fully. Parallel with the course material, we also engaged students in a series of contemplative exercises. I would like to spend the remainder of my time on these exercises.

I should mention that students quickly realized that Eros and Insight was like no other course at Amherst. Several students told us that they had given up on education, becoming cynical about it in high school. They learned to perform whatever was asked, even if it failed to connect to their lives, their deepest questions, and most intense longings. Big jobs with big salaries were the material carrots for high performance, and Amherst was merely a means to that end. Set the bar anywhere, and they would jump over it, not out of sincere interest, but because they were smart and well-trained. It took time to win them over, to reawaken in them the root aspiration they all have, which is not primarily about education as an instrument for wealth it is about transformation, acquisition. Instead, development, and becoming all they can be. In my 25 years of teaching, Eros and Insight was the most gratifying teaching experience I have ever had. I am especially grateful to the students who trusted us to lead them into new territory and experiences.

The First Class

We told them, "This is the first day of your new life. You have gotten into Amherst College; you are no longer at home; what will you make of this precious life which you begin today!" Then we handed out passages from Henry David Thoreau's Walden (1966) and Simone Weil's Gravity and Grace (1987).

• "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived" (Thoreau, 1966, p. 61). Here an initial theme of the course is introduced. What does it mean to go to the woods? Thoreau sought a place apart, in order to live mindfully and deliberately. We will do likewise, setting apart times to be mindful and deliberate, in order that

we too can learn to discern the essential facts of life. In the rush of our lives we too often pass them by. As part of the class we will periodically pause, be silent, reflect, and in this patient, quiet way we will learn.

 In Thoreau's (1966) description of the morning we met a second essential theme of the course: becoming awake.

The millions are awake enough for physical labor; but only one in a million is awake enough for effective intellectual exertion, only one in a hundred millions to a poetic or divine life. To be awake is to be alive. I have never yet met a man who was quite awake. How could I have looked him in the face?" (pp. 60-61)

The students had been admitted to Amherst because they proved they could handle intellectual exertion, and what more remained? By the end of the hour, many longed to waken to a poetic or divine life, and so truly be alive.

- Simone Weil (1987) writes of the ubiquitous power of gravity, which is everywhere and orders all things except grace. Grace alone defies gravity's grasp, but it requires special conditions in order to appear. Weil says, "Grace fills empty spaces but it can only enter where there is a void to receive it" (p. 55). Simone Weil evokes the powerful importance of silence, emptiness, openness, the Void. Meditation helps us enter the space of silence and to foster the openness into which grace can appear.
- Quite naturally our conversation with the students moved to a final series of slides showing a Zen garden and a pond with ripples: Basho's (1967) haiku, and their first meditation exercise of five minutes of silence, ended the class.

Breaking the silence
Of an ancient pond
A frog jumped into the water —
A deep resonance.

 The students were to continue the exercise with silence on their own. We assigned a one-page paper of pure description on the stages and experience of meditating silence. No flights of imagination, or sophisticated scientific, or philosophical analysis—only simple, attentive, deliberate, and descriptive prose.

Sustained Attention

The second exercise is on sustained attention and the cultivation of the so-called "afterimage." Any sense object will do, but take a bell sound. The meditation has three phases which we perform, and a fourth that is grace.

- Sound the bell three times. Listen intently to its form and timbre.
- Even after the bell sound has died away to outer silence, we possess the memory of the bell sound. We can resound the bell inwardly. Do so. Listen to its inner reverberation, again and again.
- The third phase is that of silence. Allow the memory of the bell sound to fade, releasing all sound, and opening the attention wide. The appropriate mood for this state is wonderfully characterized in Lao-tsu's (1988) *Tao Te Ching.*

The Master doesn't seek fulfillment. Not seeking, not expecting She is present, and can welcome all things. (p. 15)

• The fourth phase is not enacted by us, but may presence itself in the silent space thus prepared and sustained. In Buddhaghosa's (1975) description of the so-called ten *kasinas* or devices (earth, water, air, fire, four colors...) this is called the "afterimage" phase. During this phase the inner aspect of the bell sound, or other sense experiences used in the same way, arises in the silence or void.

Maintaining Openness

True single-pointed attention is, by definition, oblivious to everything outside the immediate field of attention. Contemplative inquiry moves out from sustained, focused attention to open attention. When we release the bell sound we already are approaching this stage of practice. However, it can become the main feature of the exercise by using relationship as the focus of attention. Any comparison will do, but one we have used is the simplest value-scale exercise common to artistic training. Giving the students paper, brush, and black and white acrylic paints, we ask them to make a graded sequence of grey squares that move evenly from white to black.



We use this and other comparison exercises to cultivate a sense for relationship and the inner discernment of difference, which we see as the first feature of contemplative cognition. One moves from single states of awareness to the direct perception of differences and similarities. This is a key moment. If we intend to connect contemplation to knowing, to *veritas*, then we must articulate an understanding of contemplative practice that moves from the psychological and health benefits of meditation (which are great) to its cognitive dimensions.

Sustaining Contradiction

The fourth stage of contemplative inquiry proved especially challenging for our bright Amherst students. Whenever they have been thrown a problem, they want to solve it. If they encounter a contradiction, they resolve it. Reality is often resistant to this approach, and for good reasons. I lectured them about wave-particle duality in physics and Ioel spoke about the artistic tension produced by antagonistic elements in great works of art. We sent them to the art museum in pairs to look at particular portraits which had the strange habit of looking back. We put one student on one side of the gallery and another on the opposite side. The painting looks at each; it looks in two directions simultaneously. Impossible. The 15th century cardinal Nicolas of Cusa (1960), who recommended this exercise to his monks, called this and similar phenomena a coincidence of opposites. Think about it, hold the contradiction and instead of resolving it, sustain it-practice sustaining contradiction!

But the deep significance of cultivating a consciousness that can sustain contradiction was appreciated only when it came home to our students during one of our informal evening conversations. Several of our racially mixed and ethnically diverse students began to speak about the irreconcilable complexity of their own lives that had caused them great uncertainty and personal suffering for years. Were they Chinese or American, how did the Haitian home they had just left (so full of life, spoken Krévol and deep religiosity) relate to the life of the pristine mind and raucous campus life they were pursuing here at Amherst? Were they betraying their lineage? Did they need to decide between their contradictory identities? How could they? Their very lives required them to sustain a huge contradiction. As the Lebanese-French writer Amin Maalouf (2003) has put it, it is precisely through the irreconcilable complexities of our lives that our identity emerges. When we deny that complexity, as a society we quickly decompose into warring ethnic and religious factions vying for dominance.

Developing Self-Love

Only when we reached this turning point were we and the class ready to speak of love explicitly, because the architecture and life of love is animated by impossible contradictions. We long to be one with the beloved without in the least damaging or distorting her. We study the troubadours and their *chansons* which repeatedly sing of love's contradictory nature, as these lines from Arnaut Daniel (n.d.) of the thirteenth century show:

I never held but it holds me all the time in its bail Love and makes me glad in anger, fool in wisdom as one that never can fight back, because a man that loves well, cannot defend himself.

Love is at once painful and joyful, a "sweet sorrow." Love can begin with ourselves, accepting and even delighting in the contradictory elements out of which we are composed. Am I a scientist, a poet, or a philosopher? Yes, to all of them. The structures of our institutions of higher education belie this complexity. At best they struggle to capture it through interdisciplinary conversations representatives from different disciplines. These often play out like negotiations between nations or ethnic groups at the U.N. More is required, much more, if we are to integrate these diverse elements without dissolving them, and it starts by leveraging the contradictions in ourselves. This can only happen if we love the contradictions, and so love ourselves.

Developing Love of Others

The well-known Buddhist loving-kindness meditation allows one to gradually widen the circle of one's compassionate and loving attention. Starting from oneself, we then go on to someone close (a friend, relative, spouse). We wish them peace, joy, well-being. We continue to widen the circle of our loving attention still further to those we do not know well, wishing them also peace, joy and well-being. And finally we choose someone who is troublesome and difficult in our life. Even to them, we wish peace, joy and well-being.

By this time we are reading Plato's *Symposium*, his great dialogue on love. Love, as taught to Socrates by Diotima, is not only practiced toward other persons, but also toward beauty in nature and toward the great institutions that embody our highest ideals. Ultimately we love the ideal forms that are reflected everywhere throughout the beautiful in both natural and human creations. The "ladder of love," however, leads not only up to the realm of pure forms, but it also descends to the mundane. The closing pages of the dialogue in which the drunken Alcibiades describes his love of Socrates, and dares to speak of the noble life of Socrates, are testimony to a life lived in love for his students and for his fellow Athenians, as well as the eternal ideals of truth, beauty, and goodness, a love which was repaid with a glass of hemlock.

Love of the Deed

An important figure in our course at this point is the beguine Marguerite Porete who lived and died around 1310. In her book the Mirror of Simple Souls, Porete (1993) used the new language of fin amor as sung by the troubadours in Old Provençal to describe her amor de loing, her "love from afar." In her case her distant love was not for an earthly companion but for God. Through the intensity of her love for her beloved, she realized that true moral action was not guided by the rules of what she called "the church of the little," but by the great church of love. In place of the theological Virtues, from which she declared herself free, she espoused action guided by love alone, quoting St. Augustine (2004): "Love, love and do what you will." Love became for her a force granting her moral knowledge or insight. Her espousal of love as the true guide for action brought her into conflict with certain bishops within the Catholic Church of France. As a result she was arrested, imprisoned, and tried before the Inquisition in Paris. She refused to recant her love and views, and was thus condemned to die by fire for "The Heresy of the Free Spirit." At her execution all wept when they saw with what quiet nobility she met her death.

Students are deeply moved by Porete's valiant, though tragic life. We ask them to meditate on Augustine's line, "Love, love and do what you will," which was at the heart of Porete's life, and to write on how eros and insight are here raised to a form of contemplative knowing in the realm of ethics. After all, Marguerite Porete knew something so surely that she could stand silently and confidently before the greatest scholars of the Paris Inquisition without wavering. Loving love had granted her an insight or aperçu for which she was willing to die. To do otherwise would have been to betray not only what she knew but also her beloved.

Re-Imagine Your Education

Our final assignment to our students was to re-imagine their Amherst College education in light of eros and insight. They had studied Kepler and Rembrandt; they had read Oliver Sacks, Niels Bohr, Barbara McClintock, Albert Einstein and Werner Heisenberg. They had read the troubadours, Merton, Rilke, T. S. Eliot, and Plato on love. In addition they had meditated on silence, attention, openness, contradiction, self-love, love of others, and love of the deed. What, we asked, should education—their education—be in light of all this? This was their final paper assignment: redesign your Amherst education in light of eros and insight, in light of the relationship between love and knowledge.

Upton and I ended Eros and Insight with an image suggested to us by a pair of students in our initial offering of the course. In is simplest form, the visual metaphor is a doorway or entry composed of two posts with a lintel spanning the space between them. The two posts are a visual

metaphor for the course's two parts: eros and insight. As our students pointedly recognized, eros can quickly be debased to lust, but insight can also be diminished to instrumental reasoning alone. Yet eros can also be enhanced to become the lintel of love, which seems to imply that the enhancement of insight becomes love as well, a knowing that is also a loving, an epistemology of love.

In this manner, as it turns out, the task first put to us by Rilke, learning to love, is also the task of learning to know in its fullest sense. Karl Jaspers (1974) quotes Nicolas of Cusa concerning the highest form of human knowing, saying: "knowledge is here identical with love and love identical with knowledge" (p. 51). An epistemology of love is not a flight from reason to sentiment. The academy has nothing to fear from contemplative inquiry; indeed, such inquiry is in some measure already part of a covert curriculum that educates for discovery, creativity, and social conscience.

As true educators, I believe that we are all engaged in an important project, one with a long tradition. The project of ancient philosophy was to live a right life, to embody virtue not only legislate it, to engender creativity and the capacities for insight, not only memorize formulae and works of art. As Hadot (2002) puts it, the ancients' education was "a course of training which would make them simultaneously contemplatives and men of actions – since knowledge and virtue imply each other" (p. 90).

In his final paper for Eros and Insight, Ryan (not his real name) confessed that he was now unsure what to tell his parents about his career plans. His mother was a nuclear physicist and his father was a neurosurgeon. They expected a six-figure salary for him immediately upon graduation, and prior to the course he had gone along with their expectations. In his final paper he wrote, "How do I tell them that now the only thing I want to be in life is a lover?" Given his formidable talents, I feel confident that Ryan will succeed outwardly, but I hope he remembers to live deliberately, to cultivate silence, attention, and relational awareness, and even to sustain contradictions. Then he will be vulnerable to and participate in the mysteries that are everywhere around him. He will move from being a spy to being a lover whom nature will accept. In the process, he will reform himself, shaping organs for cognition, for a high kind of seeing that can constitute true theory. The ethic associated with this epistemology is one he can live by. Yet because at this highest level, which is the level of deep contemplation, knowing and loving are one (united?), and his actions will be virtuous and his words true. He will, in some measure, have accomplished the greatest and most difficult task of all, that for which everything else is but a preparation: he will have learned to love. •

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References

- Augustine of Hippo. (2004). St. Augustine on homilies on the gospel of John, homilies on the first epistle of John and soliloquies. Whitefish, MT: Kessinger Publishing. (Original work written in A.D. 416)
- Basho, M. (1967). The narrow road to the deep north and other travel sketches (N. Yuasa, Trans.). London: Penguin. (Original work published in 1686)
- Buddhaghosa. (1975). Path of purity: Being a translation of Buddhaghosa's Visuddhimagga (P. M. Tin, Trans.). London: Pali Text Society. (Original work written A.D. 350)
- Daniel, A. (n.d.). I never held but it holds me. In *Complete works*. Retrieved September 28, 2006, from http://www.cam.org/~malcova/troubadours/arna ut_daniel/arnaut_daniel_02.php
- Emerson, R. W. (1926). *Emerson's essays*. NY: Thomas Y. Crowell. (Original work published 1844)
- Goethe, J. W. (1988a). Scientific studies (Douglas Miller, Ed. and Trans.). New York: Suhrkamp. (Original work published 1810)
- Goethe, J. W. (1988b). Scientific studies (D. Miller, Ed. and Trans.). New York: Suhrkamp. (Original work published 1823)
- Hadot, P. (2002). What is ancient philosophy? (M. Chase, Trans.). Cambridge, Mass.: Harvard University Press. (Original work published 1995)

- Jaspers, K. (1974). Anselm and Nicholas of Cusa (H. Arendt, Ed. and R. Manheim, Trans.). New York: Harcourt Brace Jovanivich. (Original work published 1957)
- Kegan, R. (1982). The evolving self. Cambridge, Mass: Harvard University Press.
- Kegan, R. (1994). In over our heads. Cambridge, Mass: Harvard University Press.
- Lao-tsu, (1988). *Tao te ching* (S. Mitchell, Trans.). New York: Harper Collins. (Original work written circa 500 B.C.E.)
- Maalouf, A. (2003). In the name of identity: Violence and the need to belong. London: Penguin.
- Merleau-Ponty, M. (1962). Phenomenology of perception (C. Smith, Trans.). London: Routledge. Preface. (Original work published in 1945)
- Mezirow, J. (2000). *Learning as transformation*. San Francisco: Jossey-Bass.
- Montessori, M. (1972). Education and peace (H. R. Lane, Trans.). Chicago: Regnery.
- Nicolas of Cusa. (1960). The vision of God (E. G. Salter, Trans.). New York: Frederick Ungar. (Original work published in 1453)
- Obuchowski, P. A., Jr., (1969). The relationship of Emerson's interest in science to his thought (Doctoral dissertation, University of Michigan, 1969). Dissertation Abstracts International, 30 (09), 3915.
- Palmer, P. (1993) The Violence of our knowledge: Toward a spirituality of higher education. Retrieved September 29, 2006, from http://www.21learn.org/arch/articles/palmer_spir ituality.html
 (See also P. Palmer (1983), *To know as we are known*. Chapters 1 and 2. San Francisco: Harper.)
- Porete, M. (1993). The mirror of simple souls (E. L. Babinsky, Trans.). New York: Paulist Press. (Original work written in 1290)
- Rilke, R. M. (1954). Letters to a young poet (M. D. Herder Norton, Trans.). (Rev. Ed.). New York: W. W. Norton. (Original work written 1904)

- Rilke, R. M. (1975). Rilke on love and other difficulties (J. J. L. Mood, Trans.). New York: W. W. Norton. (Original work published 1904-1925)
- Schrödinger, E. (1967). Mind and matter. Cambridge: Cambridge University Press. (Original work published in 1956)
- Sloan, D. (1993). Insight-imagination. Westport, CT: Greenwood Press.
- Steiner, R. (1995). Die verbindung zwischen lebenden und toten (A. Zajonc, Trans.). GA 168. Dornach, Switz: Rudolf-Steiner-Verlag. (Originally a lecture from 1916)
- Sternberg, R. J., & Davidson, J. E. (1995). The nature of insight. Cambridge, MA: MIT Press.
- Thoreau, H. D. (1966). Walden and civil disobedience. New York: W. W. Norton. (Original work published in 1854)
- Weil, S. (1987). *Gravity and grace* (A. Wills, Trans.). New York: Ark. (Original work published in 1947)