The Cartesian/Newtonian vision of human existence is outdated because modern quantum physics has rendered it inaccurate. Quantum theory has demonstrated that the world cannot be reduced to independent and separate elements. The notion that there is an external, objective reality "out there," separate from the self, to be classified, measured, quantified, and manipulated has been severely undermined. But while the scientists in the hard sciences are moving beyond "commonsense" notions, social scientists, especially psychologists and educators, remain entrenched in the dualities of older Western thinking. The time is ripe for a paradigm shift in these fields, and techniques such as metaphor-based transformative narrative and "classroom therapy" may be central to this process. Instructors should become cognizant of the metaphors that they and their students use to construct knowledge about the learning process and about the self. Additionally, educators might ask, along with D. J. Flinders, "How do metaphors presented in text materials, courseware, or a class discussion reproduce cultural stereotypes?" Similarly, Eastern philosophy might be used to challenge Western assumptions. Instead of explaining the inherent unity of all life and energy in the universe (an idea supported by modern quantum physics) in logical, linear fashion, Taoist, Buddhist and yogic teachers use stories and parables to help students metaphorically uncover their meaning. The most popular example of such a method is the Zen Buddhist "koan," a riddle impenetrable by logic. (Contains 15 references.) (IB)
Metaphorical Transformation: A Tool for Enhancing Holistic Language Instruction and Student Identity

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Introduction

The recent trend toward "student-centered instruction" in language education raises some vital questions about what it means to be a "language student." For example, one can reasonably assume that the better the role of language student is understood, the more that is known about the activities, conversational or otherwise, involved in being a language student, the more successful will be our attempts to improve the effectiveness of language learning. And, as Berry (1987) states, "It is principally through conversational interaction, the give-and-take of everyday multi-party discourse, that social 'roles' [such as the role of 'student'] are sustained" (p. 43). Thus it is natural that analyzing language classroom discourse would be a prime way to explain the concept of student in such a setting, and ultimately, to create ways to improve the student's condition as a language learner.

One way to deconstruct the role of student is to conduct a kind of "distinctive feature" analysis of "student" and its attendant social roles. Such an analysis could capture the similarities and differences between a student's concepts of self-identity and role as reflected in conversational interactions, and the concepts of his or her identity and role entertained by other participants in such discourse. A productive new approach to performing such analyses involves metaphor. The metaphorical constructions of students and children are being analyzed by researchers such as Lipson (1989) and Mills and Crowley (1986).

Lipson (1989) uses discourse samples to discover the larger cognitive "meaning contexts" or schemata that arise from young adults'
use of metaphor in describing their roles as students: "The particular quality of these students' communications is determined not only by the specific words they say but by the nature of the larger metaphoric context from which their words are drawn---and to which their words belong" (p. 12).

She then uses these broader metaphorical gestalts to uncover the impact of students' figurative language on their relationships with teachers and other students, for example, the effect produced when student and teacher metaphors do not coincide:

In many subtle and not so subtle ways, our assumptions about learning are grounded in the guiding metaphors which underlie our sense-making. So what happens when students and teachers try to communicate with each other using different metaphoric languages? Whatever the particular mismatch, differing assumptions about learning may be more responsible than we realize for the impasses that arise between teachers and students. It is not the fact of a mismatch itself that is problematic: rather, metaphoric mismatches cause problems when they go unrecognized and their inherent operating assumptions remain packed up tight. Indeed, the process of unpacking mismatched metaphors when they do occur can actually provide an important context for learning. That is, although hidden mismatches are often problematic, mismatches explored are often informative and inspiring (Lipson 1989 p. 17).

The exploration of mismatched metaphors, or even consistent ones that may be conducive to ineffective teaching and learning is a relatively
untapped area of study. In the following paper I will discuss some productive work in discourse analysis of metaphorical usage in various settings, emphasizing the development of a holistic, integrative, or "ecological" approach to language education and educational evaluation through such methods.

Metaphor Studies

Educational Research on Metaphor

As mentioned above, Lipson (1989) has analyzed student discourse to reveal the ongoing cognitive schemas that affect students' notions of self-identity in learning situations. She posits five categories that can be used to explore metaphoric systems:

1. LANGUAGE: What is the language of the metaphoric system?
2. CHANGE: What happens in the system? What constitutes change-over-time?
3. PROCESS? How does change-over-time happen? By what process does change occur?
4. RISKS: What are the risks, dangers, or fears implied or inherent in the system?
5. ABIDING BELIEF: What abiding belief or conviction about human nature is implied by the use of the metaphor? What does the system assume or take for granted with regard to the process of change-over-time? (Lipson 1989, p. 15).

Applying this set of questions can provide a basis for comparison across metaphors. In Lipson's case, it has led to a schematic system of
classification that she uses to "unpack," the constructions: "When we see
[metaphors] unpacked, it [becomes] clear how different they are. It
[becomes] understandable that students' expectations about learning might
differ dramatically depending on the metaphoric context which underlies
their sense-making. Each [metaphor] suggests a different sort of
world-view---a different take not only on education but on existence [as a
whole]" (Lipson 1989, p. 15).

Lipson (1989) supplies discourse samples from three students in a
sophomore tutorial at Harvard. Each one expresses notably different
experiences in the same class:

Cora: "I can't seem to make the connections, to put it all together.
I think it's because I've never really studied this subject before, so
the material is all new and I don't have any base, any foundation to
build from. The other people in the class seem to be better equipped
to make sense of it all."

Grady: "I don't think I've matured a lot intellectually in my tutorial.
I guess it's given me a lot of food for thought, but most of the time
I just can't read everything carefully enough to really satisfy me.
I'm hoping my thinking will develop just by being exposed to so
much, just by trying to absorb it all."

Marco: "Sometimes the pressure gets to me. I try to keep pushing
along, you know, forcing myself to keep up a good pace. But when
things get to be too much, I just lose my momentum. It's like I'm
always either incredibly driven or really depressed" (p. 12).

What one gains from these comments is a sense of the "guiding metaphors" or basic metaphorical themes that underly the students' sense of self and
role in a particular classroom setting at Harvard. But these constructions may be common to the speakers' overall life experience and sense-making as well. To quote Lipson (1989) again, "They each suggest a different world-view---a different take not only on education but on existence [as a whole]" (p. 15).

Cora seems to see herself as an active "builder" involved in the "construction project" of education. She appears to feel "ill-equipped" to make sense of her tutorial, "to put it all together," as if she were a detached agent acting on the "separate" subject matter at hand in a craftsman-like way. Similarly, Marco expresses a kind of dualistic viewpoint toward his tutorial by seeing himself as a detached object "pushing along," "keeping a good pace," "losing momentum," and being "incredibly driven." By contrast, Grady uses a more passive, "organismic" metaphorical approach. He sees himself as assimilating "a lot of food for thought," as not being "really satisfied," as "being exposed" to material and as "trying to absorb it all."

A longitudinal, discourse analytic study of these students' speech in a number of life settings would provide a broader perspective on their dominant metaphorical views on self-concept and student role. Such an approach could include other aspects of discourse besides metaphor. For example, as Flinders (1989) suggests, besides asking "How do metaphors presented in text materials, courseware, or a class discussion reproduce cultural [and personal] stereotypes? our inquiry might involve developing a sensitivity to how patterns of turn-taking, the use of humor, the privileging of the written over the spoken word, and forms of nonverbal communication (gestures, tone of voice, posturing)
frame classroom instruction" (p. 20). In addition, a researcher could address how, through these frames, "students learn about their relationships with one another, their teachers and their curriculum" (p. 20).

Lipson (1989) feels that such a broad approach is especially important because she says that "the usefulness of figurative language [per se] has its limits. Metaphors can be exclusionary, allowing no place for important parts of our reality or experience, or they can be misleading, implying from within the metaphoric system some metaphoric truth that simply does not apply to our experience" (p. 18).

But this latter point is debatable. For instance, psychoanalytic (or psychodynamic) psychologists would argue that no aspect of our discourse is unrelated to our experience, because all speech and writing reflect unconscious processes that are unitive and incapable of being contradicted by our conscious or overt behavior. That is, everything we say or do can be traced to some covert, unconscious meaning (or to paraphrase Freud, "there is no such thing as a joke").

From this perspective, metaphor and other aspects of discourse take on a new dimension of connotation or relevance. In the words of Kopp (1971), "In [the metaphorical] mode we do not depend primarily on thinking logically nor on checking our perceptions. Understanding the world metaphorically means we depend on an intuitive grasp of situations, in which we are open to the symbolic dimensions of experience, open to the multiple meanings that may all co-exist, giving extra shades of meaning to each other [italics added] (p. 16).

Jaynes (1976) extends Kopp's viewpoint by asserting that the
subjective conscious mind is the process of metaphor, or a vocabulary or lexical field whose terms are all metaphors or analogs of behaviors in the physical world. Thus metaphor serves the twofold purpose of "(1) describing experience, which may then (2) generate new patterns of consciousness that expand the boundaries of subjective experience" (Mills & Crowley 1986, p. 16).

In other words, when one begins to describe a particular experience "as it occurred," one generates, in the very process of description, new correspondences which in themselves expand the original experience beyond what it was at the time: "This process of enrichment occurs as a result of the generative powers of metaphor within the human mind. If this view of metaphor as a natural generator of new patterns of consciousness is correct, then it follows that metaphor would be a particularly helpful means of communication in precisely those situations of therapy, teaching, and counseling that seek new understandings as their goal" [italics added] (Mills & Crowley 1986, p. 16-17), which leads us to the next section of this paper.

Therapeutic Uses of Metaphor Applied to Education

As Mills & Crowley (1986) point out, "Eastern Masters from many orientations have long made use of metaphor as a primary vehicle for teaching. Recognizing that most students approach learning from a logical, rational perspective---and that this perspective in itself would form a barrier to progress---the Masters sought more indirect means" (p. 8). For instance, instead of trying to explain concepts like the inherent unity of all life and energy in the universe (an idea supported by modern quantum
physics) in logical, linear fashion, Taoist, Buddhist and yogic teachers use stories and parables to help students metaphorically uncover their meaning.

The most popular example of such a method to reach the West is probably the Zen Buddhist koan, a paradoxical riddle impenetrable by logic. A koan that has become popular in the West is "What is the sound of one hand clapping?" On first hearing, this statement sounds like a direct request for information, but it is actually indirect and quizzical. Its object is to provoke a deeper quest for knowledge on the part of the student through the use of enigma.

A koan's teaching value comes from the fact that "solving its riddle requires the student to bypass or transcend normal dualistic modes of thought. Right and wrong, black and white, lion and lamb must fuse into a unity if the koan is to be solved. In this way, the enigmatic, cryptic and metaphorical quality of the koan forces the mind to reach past itself for solution [italics added]" (p. 10). Thus, in this case, "the sound of one hand clapping" becomes identified metaphorically with the unitive nature of the cosmos through the student's transcendence of linear reasoning.

This process of the mind "reaching past itself" leads ideally to non-dualistic or non-discursive states of consciousness in a student, which is an object in Zen, and can be a goal in Western language teaching as well. According to several writers (Koestler 1967; Roberts & Vaughan 1974; Miall 1987; Roberts 1989), these "selfless" states of awareness are conducive to enhanced creativity and inventiveness. As Miall (1987) asserts, "An examination of evidence of artists and scientists on their creative processes suggests that the transformation of material in
thought under the impact of experiential anomalies is a key to understanding creativity. A similar problem underlies the transformational process of understanding a metaphor (p. 81).

Thus one can think of such "consciousness expansion" in terms of the transformative power of metaphor discussed above. To quote Mills & Crowley (1986) again, "If this view of metaphor as a natural generator of new patterns of consciousness is correct, then it follows that metaphor would be a particularly helpful means of communication in situations [such as] teaching that seek new understandings as their goal" (pp. 16-17). In terms of sense of self and role, the value of metaphor in helping a learner to transcend linear, dualistic views of self (subject) that is separate from knowledge (object), "self-as-conduit-of-knowledge" or "self-as-object-of-input" is obvious.

The Harvard students quoted above by Lipson (1989), who see themselves as separate subjects acting on information in the "construction project" of education, or as objects moving or being moved about in the detached "topography" of the learning environment, could be helped toward a more holistic or unitive view of themselves as learners. A metaphorically transforming technique such as the koan, or the metaphorical methods of Erickson & Rossi (1976/1980) could be applied in such cases to help students experience themselves less as isolated entities and more as organically one with the learning environment.

Erickson & Rossi (1976/1980) are psychotherapists who have devised therapeutic uses of metaphor that are applicable to the classroom. Their methods simultaneously address conscious and unconscious processing:
Erickson was extraordinarily skilled at crafting what Rossi termed "two-level communication," which was a means of communicating simultaneously with both conscious and unconscious minds. While the conscious mind is provided with one message (in the form of concepts, ideas, stories, images) which keeps it "occupied," another therapeutic message can be slipped to the unconscious mind via implication and connotation. Rossi notes that Erickson's interpersonal technique best illustrated the principle of two-level communication wherein specific, therapeutic suggestions are integrated within a larger context (a story, anecdote, joke, etc.). While the conscious mind is listening to the literal aspects of the anecdote, the carefully designed, interspersed suggestions are activating unconscious associations and shifting meanings which accumulate and finally "spill over" into consciousness (Mills & Crowley 1986, p. 18).

In this technique, the conscious mind is surprised because it is presented with a response within itself that it cannot account for. Analogy, metaphor and jokes can be understood as exerting their powerful influences through the same mechanism---the activation of unconscious association patterns and response tendencies that "suddenly summate to present consciousness with an apparently 'new' datum of behavioral [and cognitive] response" (Erickson & Rossi 1976/1980, p. 448).

Erickson and Rossi use this method to help clients change their self-defeating, alienating metaphorical concepts of self, others and the environment. Such change does not occur immediately, nor is the impact of the new metaphorical constructions to which clients are exposed felt all
at once. Instead, "a certain number of new meanings are generated, which in turn produce new behavioral responses---which in turn reinforce the metaphorical input to generate another series of new meanings. A cycle or circular flow of change is thus activated with a kind of built-in, self-generating feedback system" (Mills & Crowley 1986, p. 20).

This approach to metaphor as a kind of bi-level communication evocative of new cognitive/behavioral responses is applicable to language instruction and other teaching settings. For example, reifying metaphors such as those of Lipson's (1989) students discussed earlier could be addressed through the telling of metaphorical folktales or anecdotes from cultures possessing an organismic, holistic view of nature and the universe. And students could be encouraged to simultaneously write journals or narratives in order to see if new, more holistic metaphors are being generated. Thus students and teachers would be gradually exposed to more unitive notions of self/learning/environment relationships than those currently dominant in our schools.

The reification or objectification reflected in Lipson's students is typical of most learners in Western language classrooms, where teachers continue to adhere to the outmoded mechanistic, positivist model of science and nature propounded by the French thinkers Mersenne, Gassendi and Descartes in the 17th century. In this model, the "animistic, organic assumptions about the cosmos [common in the medieval period were replaced] with an atomistic theory in which dead, inert particles were moved about by external rather than inherent forces. In this view of reality, self, society and the cosmos were [defined] in terms of a new metaphor---the machine" (Hatley 1991, pp. 3-4).
In contrast to this dualistic, mechanistic perspective, cosmologies and views of self in most non-Western traditions reflect a sense of oneness with nature, with others and with the universe. For example, in Native American discourse, a sense of complete harmony with the cosmos is revealed in figurative language such as metaphor. Among Native Americans, harmony and balance with the surrounding environment are highly prized and sometimes subject to intervention through ritualized narrative.

The Navajo, for instance, use narrative to secure order in the universe in a direct way:

Balance in the microcosm for the Navajo spokesman [is] a result of events in the macrocosm. Language [is] instrumental in restoring incongruent elements of both worlds, thus preserving or restoring harmony. While differences [exist] among the tribes of the North American continent in their mythologies, languages, and customs, a common belief linking Indian cultures [is] their use of discourse to secure order, harmony and balance. As for the Navajo, expression reflects conditions of stability and, in itself, provides a stabilizing force in all Indian rhetoric. Language [becomes] an extension of order created intentionally by humans. As a result, figurative expression [such as metaphor] in the discourse of the Indian [is] more than simple ornamentation or memory-cuing, it [is] a reflection of the cosmos in harmony (German 1989, p. 4).

Similarly, using works of their own composition or from holistically oriented cultures, students in Western language classrooms could develop
balanced self-identity and integration with others and the universe through the process of narrative.

The metaphorical aspects of such student narratives could bring about change through the mechanism of multilevel communication discussed above. Thus notions of the self as a separate, objective "reality" or "thing" might be transcended. Schafer (1981) refers to this process as coming to view the self not as a thing but as "a telling":

We are forever telling stories about ourselves. In telling these self-stories to others we may, for most purposes, be said to be performing straightforward narrative actions. In saying that we also tell them to ourselves, however, we are enclosing one story within another. This is the story that there is a self to tell something to, a someone else serving as audience who is oneself or one's self. When the stories we tell others about ourselves concern these other selves of ours, when we say for example "I am not master of myself," we are again enclosing one story within another. On this view, the self is a telling. From time to time and from person to person this telling varies in the degree to which it is unified, stable, and acceptable to informed observers as reliable and valid (p. 31).

In terms of both the Erickson & Rossi view and Bateson's (1985) concept of "logical levels of learning," such a transformation can be seen to go beyond the mere rearrangement of an individual's conscious cognitive/behavioral system "to create a new dynamic system of mental organization" (Becker & Forman 1989). This system allows a student "to deal with and construct new understandings of reality at the unconscious
level. This is the learning to learn phenomenon" (Becker & Forman 1989, p. 41).

Conclusion

The outmoded model of human existence and the cosmos propounded by Descartes and his descendants in Western science and philosophy continues to exert its influence in modern language classrooms. As Hatley (1991) asserts, "The vision of human/nature conceived by Descartes and perfected by Newton successfully effected a division in the human psyche ---mind from body, subject from object, knower from known in a lethal split which has yet to heal" (p. 4).

The Cartesian/Newtonian paradigm is outmoded because modern quantum physics has rendered it inaccurate. Quantum theory has demonstrated that the world cannot be reduced to independent and separate elements: "There are no isolated 'building blocks' but a complicated 'web of relations.' Wholeness, integration and interconnectedness are emerging metaphors in this 'new' way of thinking. The vocabulary invoked by thinkers attempting to grasp the philosophical implications of these new theories is reflective of both the older, organic view of reality in the Western world and certain strands of Eastern thought" (Hatley 1991, p. 4).

The suggestions presented above represent an attempt to provide practical ways to heal the "split" that many Western students and teachers feel between themselves, the learning environment, others and the surrounding universe. This divisive feeling is manifested in most
educational practice, curricula and evaluation in our culture. A major axiom of the classical Cartesian/Newtonian paradigm (this model actually traces its roots to Aristotle), which has guided most Western teaching, evaluation and curriculum theory, is the notion of "scientist as detached observer."

This concept is based on the idea that there is an external, objective reality 'out there,' separate from the self, to be classified, measured, quantified and manipulated:

This mode of knowing, which has certainly dominated traditional [Western] education research [and practice], is reductionist---a method which posits a fixed or static picture, reduces unchanging situations into the particulars from their context. This methodology has tended to create knowledge that is fragmented and unrelated to a coherent whole. This belief has affected not only the way education research is approached, but the way most classrooms [and educational evaluation] operate (Hatley 1991, p. 4).

The challenge posed by modern physics to these "commonsense" views of reality has begun to introduce a strong holistic element into the worldviews of many scientists, especially those in the "hard" sciences and biology.

But it has yet to put a major dent in the thinking of social scientists, especially psychologists, and educators. The time is ripe for a paradigm shift in these fields, and techniques such as metaphor-based transformative narrative and "classroom therapy" may be central to this process. In the words of Mills & Crowley (1986), "Reviewing [various] theorists allows us to discover a common thread of respect for the
metaphor as a special and effective means of communicating. [It] is a multifaceted approach which can be used in vastly different ways toward the common goal of expanding human consciousness" (p. 23).
References


and occidental overview of the subject/objective resolution.


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