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“Why are those Leaves Red?” Making Sense of the Complex Symbols: Ecosemiotics in Education

Abstract:

Deciphering complex signals of constructed educational systems requires symbolic interpretation; deciphering complex signals that are inherently ignorant of their ecological roots requires a modification of a semiotic approach, which we call ecosemiotics. This paper examines one of many average classrooms through this veil of perception. As part of a larger reevaluation of learning in modern culture, we take apart some of the symbols of the classroom and its contained learning. The paper ends with the positing of several more ecosophically inclined teacher responses.

Introduction:

Fly over this: ... a box-shaped school made up of smaller boxes, with a big-box gym on one end, situated in an undistinguishable North American suburb. There is a green space around the boxes, much of it a playing field of grass, but off at the edge there is a small wooded area. Deciduous trees live there, their leaves tinged with bright splashes of red and orange, indicators of the coming winter. But don't get distracted by this.

Come a little closer to the boxes. Look into one of them. What do you see? There are desks in a row, or maybe there are pods or workstations. There are textbooks lined carefully on shelves, bright posters adorning the walls that show the rules of grammar and behaviour and samples of good student work. There is a place at the front of the room for the teacher to fill. The black, or white, or smart board sets the schedule for the day and plans for the future. So, all of the conventional educational tools are there and at the ready ...

A niggling question ... what don't you see? What is not present in this created world in which education is slated to happen? What does that absence suggest?

Approach even closer. Feel the easily cleaned, sticky lineoleum beneath your shoes, run your hand along the light pastel-coloured walls. Take a moment, breathe deeply. There is a lingering smell of cleaning solvent, perhaps a whiff of harried humans... anything else? What sounds? The gentle hum of the fluorescent lights, the excited voices of children heading outdoors for recess, the steady drone of a teacher making a key educational point, silence broken by the urgings of a piercing bell...

Section 1: The Messages of School: Learning Culture through Semiotics

Thinkers from Aristotle, to Marx, to eco-feminist Val Plumwood reflect on the characteristic of human culture to shape the world it occupies. This shaping occurs through actions and through theory. How we conceptualize the world influences the mark we make on it. Out of the *mélange* of histories and experiences composing our lives, our culture recognizes and emphasizes particular concepts, stories, histories and interpretations of the physical world. These culture-specific interpretations, when woven together, form the basis of our collectively understood and implicitly co-created cultural narrative.

Plumwood¹ critiques modern western culture and its emphasis on such things as reason and rationality, individuality, scientific technicism, hierarchy, competition, linearity, anthropocentrism, and atomism. She warns us of how the “foregrounding” of these cultural habits can simultaneously “background” other realities and radically separate us from other experiences and theoretical constructs that are not amenable to the particular cultural story being told. The particulars of these constructs create the superstructure that informs how we act in the world. However, this process of moving from conceptual, cultural constructs to concrete symbols is not so simply unidirectional. Each informs the other in a reflexive manner. It is also not an obviously conscious process; those who are born into and educated by the particular culture are like the proverbial fish who do not recognize the water in which they swim. Our cultural environment is the truth by, in, and through which we operate; we generally do not see, hear, taste, touch, or make sense of what has been backgrounded due to our cultural constructs.

Thus, the school, in its form, pedagogy, and content, is a symbolic manifestation of its particular culture of origin. It is, in fact, an archetypal manifestation since it plays a vital role as purveyor to the children of the culture and therefore, the particular understanding of, and way of being in, the world. Education, and in this case the school, are pivotal to the culture’s ongoing maintenance and survival. If Plumwood is right, then the school can potentially become an access point for discovering that which we foreground, the cultural story we are telling. As such, we are better able to understand the particular emphases of the culture through these manifest symbols in the school. This is where this paper begins, with an exploration of the symbols made manifest through the physical structure of an admittedly generalized school and through two, again admittedly generalized, teacher responses to a particular child’s question. Intriguingly, for the purposes of this paper,

¹ Val Plumwood, *Feminism and the Mastery of Nature*. (London: Routledge, 1993).

because of its archetypal character the school might become a point of resistance through an active process of holding back that which the culture generally foregrounds and drawing forward that which is or tends to be backgrounded. This is where our paper ends, with a short exploration of how teacher responses to that same question explored above might change in light of Plumwood's urgings to respond to that which is currently foregrounded in modern western culture. To begin this process, let us return to our school ...

What are the foregrounded messages of culture in this public school? The school is a place filled with messages that can be seen/heard/felt/smelled/touched, but the question we would like to ask is: what are these sensory messages telling us about the relationship between humanity and nature? The overall design of the school is oblivious to its surroundings, to the place and stories upon which it is erected. Such a school-in-a box, set on a flat, deforested, denuded, "anywhere" field proclaims a sense of human dominion over the pre-existing natural space. Dominance resides in humanity's very ability to ignore natural context. It also implies that knowledge, in this culture, is uniform and must necessarily displace, "cleanse the field" of other sources/materials/places of information, data, even knowledge. The appendage-like gymnasium, while nodding towards a more Grecian concept of educational integration, merely confirms the separation of mind and body. The growth of knowledge, of the important kind, takes place in classrooms, in the minds of students who are bent over desks. Work on the body, a project of lesser import, happens elsewhere, even outside.

"Outside" in this case usually refers to a well manicured and managed, homogenous field, void of diversity and distractions. This field is often bordered at the margins by "distanced" groups of trees, shade in the background helping to situate for learners through positionality what is of real value. So what is the message given to all by this arrangement? We have more to learn from humans and boxes than we do from trees! That human knowledge is distinct and isolated from that natural world and that it occurs, originates, in the center of other possible contexts of knowledge. It is a kind that has been gathered and collected in the libraries of the world and can be accessed and used by those who hold the key proffered by schooling. The trees, if lucky become construed as symbols of a lesser form of knowledge and are thrust to the periphery, inconsequential even to discussions about trees. The message is clear as to what knowledge is and it behooves the students to quickly become adept users of it. This is a knowledge that can be fragmented, detached from not only other kinds of knowledge but also from the places where we know. This structure not only compartmentalizes knowledge but it also isolates that knowledge. We learn about the "outside

inside”² a school, a classroom, our own heads setting the groundwork for the isolation and individualization suggested above.

Take a walk down the halls of this school and track the messages as we move. Rows of numbered lockers, privatized and depersonalized, grids of desks/chairs/tiles on the roof and floor, separate us from the perceived chaos and curves of the natural, proclaiming our ability to dominate and shape our world. Students hunched over their desks in apparent concentration as they complete worksheet 3-10-2 confirm the linearity and hierarchy that lurk beneath the surface and which so concern eco-theorists, these are the bone upon which the flesh of culture is shaped.

And what of the classroom itself? The teacher, dictating and deciding the who, what, where, when and how of learning, of content, and even of bodily functioning. The teacher acts as the source of the questions, the means to the answers, the arbiter of success, failure, and good conduct, the controller. What of the relations between teacher and student? The message is one of hierarchy, of locatable knowledge, of possession as power, and of a controlling, at times magnanimous central authority figure. The most important lesson learned in school is how to shape one’s inner self to delight in performing for a boss.

We can repeat this exercise throughout the school in various ways. What is present to our senses of smell, hearing, touch, sight and taste? And more importantly perhaps, what is absent? A sensual world of wonder and pungency disappears into the background as unimportant, not worthy of our attention and whole ways of making sense of the world are lost. Rows of shelves are filled with books arranged to display the linearity, compartmentalization of knowledge. A world controlled and understood by us as we move unabatingly towards some human-defined zenith, a telos which these cultural neophytes are a long way from achieving. The materials imported to create the walls, ceilings, and floor all remind us of our ability to turn the world into a resource for our manipulation and comfort. The result is an understanding of a natural world that has no reason to be considered beyond its ability to contribute to our needs.

The artifacts, symbols, and touchstones of modernity that are the source of our ecological crisis are at play in the fabric of our educational institutions and practices; they are the water in which we swim, they form the fishbowl of our reality. They can be discovered, not just through detached theoretical analysis - whether it be sociological, philosophical, or critical cultural in nature

² Joe Sheridan, “My name is Walker: An environmental resistance exodus,” *Canadian Journal of Environmental Education* 7(2) (2002): 193-206. (quote from p. 194)

- but through actual engaged awareness within the places where education happens. Further, fostering careful awareness of these messages which bombard our senses and which shape the ways in which we come to understand and act in the world is a vital consideration in the practice of ecosophical education.

Section 2: “Why have those leaves turned red?”

In this section we shift the focus to the teachers ourselves and to an exploration of another layer of messaging. Moving away from the sensory and physical manifestations to an even more implicit semiotics of education, the cultural conceptual messages made manifest in a teacher’s response to a child’s question. Here we place in context that child’s question taken from Neil Evernden’s book *The Natural Alien*: “When the child asks: ‘why have the leaves turned red?’ or ‘why does it snow?’ We [teachers] launch into explanations which have no obvious connection with the question.”³ From this jumping off point we will now offer two such responses that any teacher might commonly employ. After each response we will explore through a simple form of discourse analysis some of the potential messages, the symbolic echoes and reverberations these responses bring with them.

Outside, the wind whispers between the children’s voices. Both rise in excitement and play. The bell signals changes and little feet patter into position in the classroom. Inside, the door clicks gently shut, the wind disappears and the laughter and chatter are replaced by the anxious shuffling silence that awaits the future, a lesson in history. Silence yawns. But some desks are vacant. Three students burst into the room, the door bangs on its hinges, the result of a passionate opening. Deep breaths, sparkling eyes, flushed cheeks, a final intake ...

“Look what we found!” ... the urgent rustling of waving fists filled with vibrant maple leaves. And, from the back of the room; “Why have those leaves turned red?” The question hangs.

Commonly Employed Teacher Answer #1: *Nice question ... you see it has to do with chemistry, as the days are getting shorter and colder the leaf is losing green chlorophyll so the other pigments, which are usually hidden by the dominant green, remain and now you can see them before the leaf falls off the tree and dies.*

³ Neil Evernden, *The Natural Alien: Humankind and Environment* 2nd ed. (Toronto: University of Toronto Press, 1993), p. 18.

At first blush we hear a teacher who has snatched a teachable moment and planted seeds for later understanding. But in this paper we are listening, looking, feeling for the messages explicitly and implicitly contained in that response. As Evernden points out, the teacher's answer does not in fact respond to the "why" of the question but to an assumed "how."⁴ This scientific move has allowed the teacher to rest their response on the authority of ecological science.

This response is also re-positioning the question from the "why" of excitement immersed in the discovery of a larger world to the "how" of science and particular pathways. Implicitly this also suggests that the child's question as asked is not really valid and needs to be re-formulated in a more acceptable form. Coupled with this is a sense that there is a known answer, it is locatable, and can be known with near accuracy. Surrounded by the appropriate sources (a teacher, a book), anyone can know the world and how it works. There is also no need to return to the place where the leaves were found because the teacher can explain the "outside inside"⁵ using her memory or information from a book on the shelf. A deeper look into the answer suggests limited understanding of the interpreted question by the teacher and yet the child is given to understand that there is little doubt that the answer is available. This kind of answer also tends towards the pacifying of the student, mere consumers rather than active agents in the world of knowledge.

The detachment from the actual red leaves clutched in hand is also an immediate move to the abstraction of chemistry and chlorophyll, reifying a sense that abstraction is valued above the concrete and experienced leaf. As David Orr writes, "we experience nature mostly as sights, sounds, smells, touch and tastes—as a medley of sensations that play upon us in complex ways. But we do not organize education in the same way we sense the world."⁶ We desensitize, we abstract, and we fragment the leaf and student. The leaf is examined as separate from the tree, chlorophyll as separate from the sun, and all these scraps of knowledge as separate from context and place. In addition each fragment is parsed into a disciplinary box—the leaf in biology, chlorophyll in chemistry, the sun in astronomy. It is not unusual to encounter this kind of fragmentation throughout education, bits and pieces that can be gathered and that might, if we are lucky, fit together in a more cogent whole.

⁴ Evernden, *Ibid.*

⁵ Sheridan, *Ibid.*

⁶ David W. Orr, *Earth in Mind: On Education, Environment, and the Human Prospect* (Washington, DC: Island Press, 1994/2004), p. 94.

Although this scientific answer is common, there is another fairly common response we, as teachers, imagine being used in response to the question of leaf colour ...

#2: That is a great question but we don't actually have time for it now ... Next year, in grade 3 you will be learning about seasons. Right now we need to begin Canadian history.

Why does a teacher feel compelled to forego an opportunity presented by a student's curiosity and move on to the mandated curriculum? And what are the messages conveyed to the students in this response? At the very least we can hear a hierarchy echoing beneath this decision. A hierarchy related to institutional power which reverberates back through administrators, school boards, federal/provincial/state standardized examinations, and centralized governance in one direction and through to universities and experts on psychological development and curriculum design in the other. At the very least, teachers experience this as an implied moral and legal pressure to follow the right curriculum in the appropriate ways in the proper time period. As such, we see the teachers embedded in and accepting of a hierarchy not of their own making while also creating the experience of encountering a hierarchy for their students.

Immersed in this soup of messages, learning is understood to occur indoors, and items, ideas, or moments like a red leaf become unwelcome interruptions. Below this, sensory experiences are limited in range and contained within these particular carefully constructed and sterilized environments. The body and its experience are marginalized, even seen to be dangerous to the goals of learning given the sensual sterility of many places of learning. Teachers worry about time and the *hows* and *wherefors* of filling that limited space with the information they are required to provide. A "tyranny of the urgent" confirms a cultural space that understands the world as being directional and linear along with an understanding of knowledge as being an object to be transferred and placed in well-defined stacks in the mind of the learner. Over time, "the other" is seen as an object of value only if it fits into the piles each of us are building.

This urgent current of mandated curriculum guiding not only learning objectives, but personal interaction between teacher and student, teaches students that their own experiences, interests, and nature are not important, or at best belong to a realm outside of that which is approved. Learning is now experienced as linear, scheduled, compartmentalized, and quite predictable, while also being detached from students' own somatic reality and the places they inhabit. Knowledge is locatable only in texts and teachers. In this particular example, nature and somatic experience as symbolized by

the maple leaf are hidden in the shadows, behind a centralized, received and pre-approved knowledge.

Thus, through schools, students become immersed in our culture's ways of being and sense-making. They repeatedly experience the explicit and implicit signs ranging from the sensory structure and content of the space where education happens to the particular responses of any individual teacher. All are the products of cultural touchstones made manifest. Anthropocentrism appears in the school's position and in the marginalization of nature, linearity is confirmed through schedules, individualization is offered as the paradigm through the systems of assessment and through moments of punishment ("no talking to your neighbours, this has to be your own work"), the underlying epistemology is layered through the texts and questions that are honoured and credited. Tests signify for all that competition is the "nature" of adulthood along with fragmentation, as seen in separate subjects and the particular atomistic ways each subject in turn is explored. Schools teach that the body is lesser than the internal world of the mind through sterile classrooms and limited experiential encounter; this dualism only acts to confirm the underlying cultural concept of hierarchy.

So, what might we do, if as Plumwood suggests, "in our current context then, it is rational to try to replace the monological, hierarchical, and mechanistic models that have characterized our dysfunctional partnership with nature by more mutual, communicative and responsive ones that could put that partnership on a better basis"?⁷ (Plumwood, pg. 11-12) How might we begin to consider this soup of signs, symbols, and messages in which we are immersed, are actually an environmentally problematic cultural theory made manifest. How might we as a teacher encountering a student with a mitt full of scarlet leaves, respond, push back, and offer up a dissonance to this dominant system of signs and symbols, something that might move towards a more ecosophical and ecological semiotics?

Section 3: "Look what we found!"

Imagining answers to the question pointed at above, this section offers a series of alternative possible responses to the excited students who found the red leaves and those who then asked, "*Why have those leaves turned red?*" These responses are intended to become more ecosophically, semiotically, and somatically aware as we move along. To begin, the first alternative response works at removing the authoritative position of the teacher by offering the question back to the students:

⁷ Val Plumwood, *Environmental culture: the ecological crisis of reason*. (New York, Routledge, 2002), p. 11-12.

“What do you think? What does everyone else think?”

Here the teacher is sharing the possibility of knowledge creation with the students, while also pushing back on the pressure to cover a mandated and scheduled curriculum. However, the knowledge creation remains detached from the place where the leaves were found: outside. To push further, the teacher could instead encourage students to look for the answers outside.

“Where did you find these leaves? Anyone else notice anything? Let’s all go have a look.”

Here the prescribed and required curriculum is further delayed and the linearity of scheduling and curriculum continues to be disrupted by removing the students and knowledge co-creation from the constraints of the indoors. The outside, the experience of place, and the interests of the students, instead of being backgrounded and dismissed, are included in the learning, invited to the table so to speak. Thus, a change occurs in the physical and sensory messages surrounding the students, along with a shift in the implicit concepts related to knowledge. At a simple level, this is a return to studying the “outside outside.”⁸ Once arriving at the place where the leaves were found, near a maple tree, the teacher could ask,

“What else is going on here? What are you noticing or sensing? What might the tree be communicating with these red leaves? Who or what is listening and responding? How?”

This implies that the tree and leaves could hold the answer to the question, rather than a book or authoritative human figure. There is a recognition of the importance of context along with a sense of complexity present here, allowing for a multiplicity of answers and new questions which may be pursued in various directions. The story being told in this instance is richer, more robust, filled with complexity and possibility. Leaves turning red is both universal with regards to life cycles, seasonal influences, question of sun and cold, and even maple trees and unique with regards to the particularities of one’s place of residence; soil, moisture, shade, age, disease. With time, we can learn and observe these relations and implications, the generalities and particularities. Aldo Leopold demonstrates this kind of learning by suggesting that the leaves - in his case blackberry leaves - are “red lanterns” marking the

⁸ Sheridan, Ibid.

sheltered home of the indomitable partridge.⁹ The point here is that these kinds of responses from the teacher open students up to encountering the world as sensorily and experientially vibrant, as of value beyond human utility, as actively functioning in complex ways only tentatively understood by humans, as being something deserving of respect. It also models alternate ways of coming to know and understand the world in which we live.

Up to this point, in each of the potential responses we have explored, the teacher's attention is focused solely on the question, "*Why have those leaves turned red?*" rather than the initial exclamation of "*Look what we found!*" This is a common reaction, as teachers are trained to answer questions with "official" knowledge, backed up by books. And yet, before the *why*, there was no question, instead a group of students were expressing excitement about finding these red leaves. What if this group of students were not even fascinated by the color red? What if it was the sweet smell or taste of decaying leaves, the rustling of the leaves bunched together while pressed against an ear, and the color red? Before addressing the question of *why*, the teacher could acknowledge the passion of these students: "*look what we found!*" While outside near the scattered red leaves and maples, the teacher could invite students to experience and enter into a relationship with the tree and its surroundings, with the natural space that immerses the school.

"Pick up a leaf, feel it, smell it, taste it, listen to it..."

Here the teacher is moving far from the abstraction of the leaf as a disembodied bit of chlorophyll and carbon and into a relational mode of knowing that is far removed from textbook knowledge.

This progression of responses offers a reimagining of how to respond to the students with whom we share time and space. Each version tries to resist and disrupt conventional teaching (hierarchical, authoritative, detached, individual, and anthropocentric) and move closer to foregrounding our interdependence with the outside world, the complexity and diversity of our situations, and the relational nature of situated knowing. We are moving toward a widening respect for the natural world where our schools are "plain member and citizen of"¹⁰ an ecological community.

Section 4: Concluding with a Different Story...

⁹ Aldo Leopold, *A Sand County Almanac: With Essays on Conservation from Round River* (New York: Ballantine, 1949/1966), p.66.

¹⁰ Leopold, *Ibid.* p. 240.

Listen to this... The wind whispering between the children's voices rising and falling as the group heads off on a trail to revisit the forest. Left behind, empty, a large box sits quietly in the background on a univocal green sward. The goose, the harbinger of change, sounds above the canopy. The group has returned to witness and experience the seasonal changes of their home. The crispness in the air signifies the need to layer clothing, to fly south, to drop leaves, to hibernate. A few students pause, crouch down... they whisper with their eyes, "look..."