**Teaching Kincentric Ecology in an Urban Environment**

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**Abstract:** The author has written extensively about American Indian relationships to the natural world with a focus on his published concepts of *kincentricity* and *kincentric ecology* (Salmon, 2000). Both are explanatory models of how American Indian cultures feel a sense of direct relationship and responsibility toward their surroundings. Traditional American Indians understand that they are directly related to everyone and everything in their natural surroundings. Everything in one’s environment is animated with a life force. How then does one teach kincentric ecology in an urban environment? A suggestion is to assign projects that will help students recognize the relationships happening all around them and to recognize that we humans exist in a relationship with everything around us. The author devised a project asking students to make periodic observations of the sun and/or moon. In the process of their observations students were asked to become aware of and to journal about their surroundings during their observations. The result was that students became periodically immersed in their natural surroundings and were, therefore, exposed to a facet of kincentricity.

**Keywords:** kincentric ecology, pedagogy, curriculum, direct observation, human/nature relationships, story, metaphor, culture of place, language of the land, indigenous worldviews, American Indian studies

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It was the highlight of the class that quarter, when, in the process of reading some student journals, I noticed that some of the students were beginning to “get it;” they were reaching awareness of the relationships before hidden from them. I am an American Indian scholar teaching in an Ethnic Studies department at California State University East Bay located in the East Bay of the San Francisco Bay area. It is a very urbanized region. Most of our students were born and raised in this urban environment. Teaching anything related to environmental studies, ecology, and sustainability can be a challenge, but is not impossible.

I can become pessimistic at times when I consider the future of our planet and of our species. After reading current climate change projections and how the extractive industries are running rough shod over nearly every corner of the world, it is difficult not to. But, then I read a passage from one of my students explaining how he noticed a few deer picking at some bushes. He watched them for a while and then decided to figure out what species of bush it was that the deer were eating, and I am filled with some hope for the future of humanity, if only we can figure out how to expose our students to more of these kinds of simple yet deep moments of awareness.

I teach our department’s American Indian studies classes. Every class I offer is infused with some element of environmentalism and sustainability from the American Indian perspective. The class mentioned above is American Indian Science. It is one class in a cluster of classes entitled Science in the Ancient World. Cluster classes are thematically linked courses where students are placed in a learning community with other students. Together the same cluster of students enrolls and passes through the same thematically grouped courses. The Science in the Ancient World cluster is a series of three courses that the students take over three consecutive quarters. Mine is the first that the students are enrolled in for the fall quarter (California State University East Bay is on the quarter system where each quarter continues for ten weeks). It is followed by an Ancient Astronomy course offered by a Physics professor which is then followed by an Ancient Architecture class taught by one of our engineering professors.

In an attempt to help my students see the natural world from a native perspective, I came up with an assignment that would stretch the entire quarter. They were to observe either the Sun or Moon once a week. They were asked to make their observations from the same exact location, at the same time of day, facing a fixed point on the horizon, and noting the position of either the Sun or Moon in relation to that point. They were then to make weekly journal entries noting their observations. I asked them to make note of the hard data such as degrees of elevation, time of day, temperature readings, etc., hoping to reinforce the “scientific” nature of the assignment. However, I also asked them to make note of their “experiences” while making their observations. I referred to this part of the assignment as a “metacommentary.” This part of the assignment was an effort to encourage the students to look at their natural surroundings from something other than a materialistic gaze. I was hoping to permit them to recognize the relationships happening all around them.

By the third journal entry, some of the students were writing about more than the data and whether or not it was cold outside. One student noted how he had never noticed the variation of colors in the sky during a sunset. Another student told a story about an elderly couple she began to notice while conducting her study. Every week the couple, holding hands, showed up at the crest of the same hill from which she was making her observations. Later in the quarter, the student was dismayed when, during one of her observation days, the couple did not show up. Another student, toward the end of the quarter, was saddened that he would no longer be awaking before dawn in order to make his observations. He had realized that it had become a wonderful way to experience some kind of awareness practice; a practice he now realized was important to him. He decided to continue this practice after the class was over.

**Kincentricity in the Classroom: Theoretical, Philosophical, and Cultural Groundings for Students to Learn Kincentricity**

A theme in all of my classes is relationships. Like the student who began to take note of the couple at her observation site and the other who was becoming more aware of everything around him, I strive to lead my students toward the idea that we humans exist in a relationship with everything around us. This is a universal American Indian concept and one that is often alien to Western thinking. Vine Deloria Jr. (2003) suggested in *God Is Red* that Euro-American culture is a “rights-based” culture and that traditional American Indian cultures are “responsibility-based.” One reason, I think, that American Indian cultures feel this sense of responsibility toward their surroundings is because most understand that they are directly related to everyone and everything in their natural surroundings. Everything in one’s environment is animated with a life force. I once wrote about his concept in an *Ecological Applications* journal article referring to the idea as kincentricity (Salmon, 2000).

In that article, I pointed out that, “indigenous people in North America are aware that life in any environment is viable only when humans view their surroundings as kin; that their mutual roles are essential for their survival” {Salmon, 2000, 1327). Later, using examples from my own people, the Rarámuri, I suggested that we view ourselves as “integral” parts of our natural surroundings and that this concept, this kincentric way of being, is encoded in our language and therefore our worldview, our way of thinking, our cognition, and our very epistemology. This manner of thinking and being directly influences our land management practices; a system of sustainably managing our landscape like a huge garden. One might refer to this as kincentric ecology.

For several years now, I have worked to bring kincentric thinking into my classrooms. Students have welcomed the concept. They quickly marry it to contemporary notions of ecology, environmentalism, and sustainability. Lately I have helped them to connect kincentricity to my work around resilience theory. Connected to human communities, resilience theory helps the researcher recognize various cultural strategies and decisions that have helped them to remain viable in the face of sudden and turbulent external shocks to their communities. Quite often, resilient indigenous communities are those that have maintained their ancestral land management systems as well as their languages.

I have been successful teaching these concepts, and my students react well to them. However, in the process of assessing how well they have learned kincentricity, I have felt that their understanding could be deeper and more complex. As a way to address this potential, I devised the Sun and Moon assignment.

Another method that I employ as a tool for helping my students go deeper into these various understandings is the use of story. Stories communicate our values through the language of the heart and our emotions. And it is what we feel through our hopes, our cares, our obligations and not simply what we know that can inspire us with the courage to act. Stories teach us how to act. They inspire us to act. As humans we hunger for community and places we can connect to on a personal, ecological, and spiritual level. Human reflections and stories of their relationship to place are living examples of resilience theory in action. Therefore I use stories of real people and their real actions. These people are important. Their tacit knowledge of landscapes and ecological systems is not discernible on the surface. These individuals can hold the future of human resilience, and their stories are our social legacies and cultural capital.

**A Kincentric Lesson Plan: Native Storytelling and Human/Nature Relationships**

My approach to teaching kincentricity is multilayered with personal narrative, theory, ethnographic observation, and what some in the pedagogical field refer to as high impact teaching practices, an example of which is the previously mentioned Sun/Moon observation project.

A central element of my teaching is story. After asking the students to read my *Ecological Applications* article, in an online lecture, I often introduce to my students one of my many indigenous colleagues who continue to practice their ancestral land management practices. An example of one of today’s land stewards is Yaqui Deer Singer, Felipe Molina.

Yaqui deer songs act as linguistic portals between this dimension and the one where the *Surem* live. The Surem are residents of a historical/mystical space where the Yaqui believe they used to reside. As a result of a community decision, they chose to leave the *Huya Ania*, the place where all first Yaqui lived, to enter into this world. However, some Yaqui chose not to leave this special place. They became the Surem. It is believed by today’s Yaqui that the Surem can sometimes be seen in desert regions outside modern day Yaqui communities. They resemble little people and can be found in desert trees and shrubs. When I consider the stories of the Surem, I can’t help but envision thin little dark skinned people with huge eyes and mischievous toothy smiles fading in and out of reality much like Lewis Carroll’s Cheshire Cat. Yaqui Deer Songs are vehicles for expressing and understanding the history surrounding the Surem. They are performed throughout the year in specially erected *ramadas* the Yaqui refer to as “*ramá*.” Deer songs are still sung in the various Yaqui villages in Sonora, Mexico and in the newer villages of southern Arizona that were established after the Yaqui diaspora at the turn of the 20th century. There are usually one or three singers accompanied by flute, a Brazilwood rasp, and a gourd water drum. The songs are fast and repetitive. It would seem that the singers would have difficulty catching their breath in-between versus, but somehow they endure the rapid staccato of the drum, rasp, and flute. The songs express notions of a space in an otherworldly time and dimension where everything is perfect and full of flowers.

I was watching deer singers in the small Yaqui community of Guadalupe outside of Phoenix, Arizona in the early 1990’s. It was a warm evening. We were surrounded by a night sky that faded out the stars due to light pollution from the nearby sprawling metropolis. The air was filled with thick zesty smells of Mexican foods, screaming children, and the staccato of the musicians. I asked a woman why she was smiling during the deer songs. She said, “Songs take us back to where everything is perfect.”

The deer songs are performed for the Surem and for the *Sea Ania*, the flower world that exists beneath the dawn. In this space, all is perfect including Yaqui deer hunters. They stalk the deer and are in communication with this intermediary between one world and another. As an author, Felipe provided a symbolically rich narrative of Yaqui sacred space and ritual in his book, *Yaqui Deer Songs* (1996). From Molina, we learn that Yaqui sacred space is a vivid, spiritually poetic human and natural dimension that is comprised of several components. The night world is called *Tuka Ania*; the dream world is called *Tenku Ania*; and the enchanted world is called *Yo Ania*.

In the East, at the place beneath the dawn, exists the flower world, Sea Ania. This place is an idealistic, prototypical natural world filled with model insects, flowers, animals (including the deer), and all the natural components of the Sonoran desert mirrored in its perfected beauty. Deer songs celebrate, describe, and praise the flower world in order to maintain the important relationship with it. The deer dance and songs of *Mayo Maso* (deer dancers) are poetic expressions of their sacred “little brother” deer, who is closely associated with flowers and the dawn. The accompaniment of the gourd water drum and the Brazilwood rasp form together an integral expression of the flower world and dawn.

Although deer singers, singers, and orators from other Native groups are not always the individuals that till the soil, save seeds, and plant crops, their roles are as crucial for the preservation of cultural diversity. Their songs and oratory are expressed in a language that has given voice to their particular landscapes for centuries. Language is an audible expression of symbols. The symbols of language express meanings that are shared by the speakers of that language.

It is not an accident that Yaqui deer songs express many relationships to flowers and to the flower world. Among Uto-Aztecan speakers, who include the Yaqui, Hopi, Mayo, and Rarámuri speakers, there are many references to flowers in most of the ceremonial and other songs and oratory. What becomes obvious is that flowers could be metaphors of a deeply ingrained relationship to the biodiversity of the regions in which the Uto-Aztecan speakers live. Another way to express this is that flower as well as plant related metaphors are abundant linguistic expressions of nature. They are also found in cultural history and in names for plants and people.

Mental spaces and metaphors draw structure and meaning from culturally cognized models and are essential aspects of cognitive studies. Some of the deeper insights into Native perceptions of land and plants were derived from metaphors. Metaphors are important to the understanding of how land based cultures are able to enhance diversity. Ecologically-related metaphors pervade everyday language which means they permeate thought and action. Metaphors are critical to interpreting daily realities of landscapes. Metaphors are central to normal daily discourse and reflect human understanding and experiences of the world.

When dealing with metaphors in Native cultures, it is important to be aware of hidden aspects inconsistent with the focus of the metaphor. Context becomes an essential aspect of metaphor analysis. Metaphors create mental images that can align discontinuities into cultural and contextual meaning.

In general, metaphors offer glimpses into the most fundamental values of a culture. They unveil which values are important and offer a means of understanding cosmology, religion, and cultural concepts. It is important to understand that cultural words carry more contextual meaning than just the objects that they denote. Cultural and social meanings are encoded in many terms for the land. As N. Scott Momaday (1992) once wrote, when we name and label things we afford them “beingness” adding them into encoded categories of experience unique to certain limited cultural contexts. When labels are used, they are dependent on the context in which they are spoken. All this linguistic and cognitive exercise has been a way of suggesting that Native languages are reflections of the landscapes with which they developed and that the speakers of those languages use them as mediums through which they express their relationships to their places.

Wherever people have been in sustainable contact and cultivation of a landscape, there has emerged a culturally recognized and sanctioned pattern of using and talking about that environment. It should not be surprising then to notice, residing in most of the highly biodiverse regions of the world, there are human communities that continue their cultural legacies reflected first in the survival of their language.

Humans tend to think in their first language. There are a few lucky people that are able to both dream and think in several languages. Language is thought, and a reflection of action and practices. Encoded in Native languages are ecological patterns of behaving with landscapes. Back in the 1990’s when I had been trying to learn more about deer singing and deer songs, Felipe invited me to his home in Marana, Arizona. Marana is located about 20 miles west of Tucson among quickly disappearing agricultural fields. The farms are being replaced by the Tucson region’s urban sprawl. Marana is one of the three original Yaqui diaspora communities that emerged over a hundred years ago. Today it is a small neighborhood of low slung cinder-block houses situated among dusty streets. Small flower and vegetable door-yard gardens give additional color to the yellows and pinks with which people have painted the exteriors of their homes. Felipe met me out side in the shade of a palo verde tree. We talked and then went for a walk. Our walk led us past the rows of nearby fields and then the unmarked boundary that separates the community from the open desert. As we walked, I noticed that Felipe was holding his hands low towards the spiny Sonoran Desert plants while sometimes lightly touching them. He noticed my attention to his hands and said that this was how he communicated with the land and was able to receive new deer songs.

Deer singing, it turns out, is more than simply memorizing lyrics to a set of songs; it is an entire way of living, being, and communicating with one’s universe. Deer songs are more like conversations between the singer, the deer, and the wilderness world. The deer singer must maintain a constant connection with the deer and Wilderness World in order to be able to properly sing the songs. The songs are recounted throughout the year, with new ones being “composed” nearly all the time. The songs are not written down, but are passed on through the generations of deer singers. To write down the songs would be similar to bringing them to a sort of textual death that would then bring death to the Wilderness World.

Written texts transform nature into silent and static symbols void of being-ness and vitality. When written texts become substitutes for nature, nature ceases to breathe and loses its color and dynamic un-resting personality. I enjoy nature writing and recognize its value for those who rarely or never have the opportunity to experience wildness first hand. My point, however, is that each essay, story, and description is only a snapshot of nature at any given moment. We can pick and choose the moments that we wish to experience. For Native people, however, nature is not momentary, nor is it outside ourselves, we breathe with it. When Felipe sings deer songs, he is voicing this living and mutual life giving relationship. The songs renew the life of the Wilderness World each time they are composed and recited.

A job of the deer singers and dancers is to periodically sing the Huya Ania and Sea Ania to life during ceremonies. For each deer dance, a new ramada is constructed. During that period when the singers and dancers are present, the ramada becomes the Wilderness World. The space housed within the ramada becomes sacred much like an ephemeral portal into another dimension of reality and sacredness. Another way to consider this phenomenon is that the Yaqui people carry with them their sacred space and release their cargo in a sort of shared group consciousness, lifting what was at one moment dry soil, mesquite posts, stone, and branches into a reality of sacredness. The deer singers are catalysts for creating a new sacred homeland with each dance and for helping today’s Yaqui maintain their kincentric relationships to their homeland.

It is essential to build a solid theoretical foundation of language, thought, and metaphor. Without it, the students have few analytical sources to draw from when engaging in the next stage of the work. I find also that, when working through examples such as with the Yaqui deer singers, many of the students are able to relate their own experiences to them. Some of the students can trace their heritage to similar traditional communities. And even if they cannot personally relate to people such as Felipe Molina, the stories and linguistic foundation helps them to more easily relate what they experience in the Sun and Moon observations to something tangible.

**High Impact Practice: Experiencing Kincentricity through Immersive Observations**

Once the theoretical and practical foundation of kincentricity has been established, I introduce the Sun/Moon observation project. The language that I present to the students is as follows:

This exercise is designed to give students practical experience in understanding seasonal Earth-Sun-Moon relationships across space and time and connect their experiences and observations to Ancient and current American Indian Solar/Lunar observations. Each student is going to observe and record the seasonal variation in the timing and relative position on the horizon of sunrises, sunsets, or the movement of the moon.

Once a week, for 6 weeks, you are to record the timing and relative horizontal position of 6 sunsets or sunrises or to note the relative position of the moon. If you choose to do sunrises, please only watch sunrises, do not mix and match.

Choose a viewing area that has a clear sight to the horizon. Make sure there are some permanent fixtures such as hills, buildings, cell towers, or trees on the horizon to act as points of reference. A good choice might be to identify a high point, such as the top of the hill next to Pioneer Heights [this is a point at the southern end of our campus], where there is a clear sight to the western horizon.

At sunset (or sunrise) note the time and make a sketch of the sunset (or sunrise) from your vantage point. You should make your observations at an oblique angle—DO NOT LOOK DIRECTLY AT THE SUN AS THIS CAN BE HARMFUL TO YOUR EYES. Be sure to make your observations from the same spot each time; do not move around. The time of sunset (or sunrise) should change each week, as should the relative position of the sun with regard to the horizon. You should space out your observations at least 4 to 5 days apart; anything less than that and the changes you are tracking may not be as readily observable. Please get started as soon as possible as you only have 6 weeks to make 4 observations and there will most likely be some cloudy days when observations are not possible; if you miss a day, just make your observation on the following day—as long as there are at least 4-5 days in between observations you should be OK. Please record the time of sunset (or sunrise) and make your sketch in the boxes provided in Blackboard.

You are then expected to write a 4-6 page metacommentary that will connect your observations and experiences to Ancient and/or current American Indian science. The report must: a) define “science” from a philosophical and practical perspective; b) connect to a specific American Indian Tribe; and c) examine the interplay of native science and western science (i.e., are they working together or are they sometimes in conflict or some combination of the two); and; d) explain the relationships between your observations, American Indian examples, and what other researchers and writers have written.

I also spend around 45 minutes in class going over the project. At this point, many of the students are a bit concerned about having to spend time outside. They are worried that they may not have the time to devote to the project, and some are not even sure about where to look for the sun or moon. Some wonder if they need special footwear while others ask if they should make their observations at night. The first time I introduced this exercise, I led the students outside in order to orient them to the cardinal directions. Despite the objections and concerns, the majority of the students soon began to enjoy the project. I encouraged them to make their observations with fellow students in order to help foster community among them. Some forced/coaxed/encouraged family members and close friends to accompany them during the weekly observations.

It is difficult to fully ascertain what the students get out of this assignment. I have not conducted a survey specifically asking them to describe their reactions. However, based on their journals and classroom de-briefs, there are a handful of specific elements that they enjoy and learn:

* + Having an excuse to spend some time outside,
  + The realization that the sun moves along the horizon with season,
  + Learning that there is a direct connection between the sun’s movements and the length of the day,
  + Learning what is meant by the solstices and why they happen,
  + Understanding that the moon is on a totally different cycle than is the sun,
  + Realizing that there is so much more one can see by simply stopping and observing, and
  + Recognizing that they are part of an incredible creation.

**Conclusions: The Value of Kincentric Learning**

Ecologically and sustainability related subjects are complex academic fields of study. Their complexities are recognized, learned, understood, and known in degrees and varying levels. Teaching and learning about kincentric ecology achieves equally complex and sophisticated levels of academic understanding and knowing. A dimension of knowing and understanding kincentricity requires awareness that is reached by some of my students during the Sun/Moon project. For a few moments at least, the students “are aware that life in any environment is viable only when humans view their surroundings as kin; that their mutual roles are essential for their survival” (Salmon, 2000, p. 1327). I suggest that this awareness is essential when teaching ecologically and sustainability related subjects, that experiencing this awareness helps our students learn beyond terminology and mental understanding. We need to teach relationships as a foundational aspect of what we do in sustainability education.

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