Divergent Biophilia: Contemplation of Animism and Porphyrin Rings

Matthew P. Larson

Transpersonal Wilderness Therapy, Naropa University

CNSW-719-A.2023FA: Ecopsychology

November 15, 2023

Author Note

This paper contains reflections on a deep dive into one chapter from Deming & Savoy (2011, pp. 263-268), specifically related to prompts paraphrased from our online course:

- *what was uncovered in relationship to the chapter*
- *what unfolded through immersion in that chapter*
- *how you might use this unfolding going forward*

Presentation slides are available online:

https://presentation-archive.herokuapp.com/divergent-biophilia.html

Divergent Biophilia: Contemplation of Animism and Porphyrin Rings

The way this chapter, written by Jennifer Oladipo, jumped out during a binge read of the entire *Colors of Nature* volume over the course of one day told me very clearly that I needed to know more (2011). Ever a buster of binaries, as one embracing heathen wisdom I practice an approach which positions all things in relationship to one another, eschewing subject-object dualism (Perkins, 2019). I was immediately taken in by Oladipo describing how stunningly similar so many essential atomic recipes are, all based on porphyrin structures. In this model, rather an array of biochemical compounds, each instance shaped by rings of carbon, hydrogen, oxygen, and nitrogen surrounding a single atom of various metals, each revealing a unique color as well its its application to a different use case. The difference in these 137 atom structures, outside of the 136 atoms devoted to identical porphyrin rings, is one iron atom (in hemoglobin), or one magnesium atom (in chlorophyll).

"The porphyrin pathway is ubiquitous in the biological realm, serving throughout the plant and animal kingdoms as the assembly line for the most abundant pigments in nature" (Dayan & Dayan, 2017). Lensen, et al, found that the enzyme Cytochrome P-450 can catalyze oxidation reactions, self-forms into a disc shape, and weighs as much as some proteins (2011). One may discover, while reading further in *American Scientist*, that nickel porphyrin bindings create a coenzyme central to bacterial metabolization of methane. Or, that cobalt bindings to porphyrin derivatives create vitamin B_{12}, a lack of which might give rise to anemia, and related nervous system issues, dysphoria, numbness, or vomiting. Dysfunctions in heme production are cited as causing swelling, itching, rashes, or blisters. We depend upon these rings of power, both internally, and broadly distributed externally, to sustain life.

One atom of a given metal is all the difference between transport and exchange of oxygen in hemes and transport and exchange of chlorophyll in photosynthesis. One atom difference between life sustaining fluids coursing throughout animals and plants; every single different type of plant or animal you might imagine. It pushes white nationalist, or any pure blood movement, rhetoric into laughable, even ridiculous space. We're expected to adhere to commands issued by people who believe that differences in skin color equate to worthiness hierarchies while they ignore that our blood, and all those mongrel race bloodlines, is almost a perfect match on the atomic level to the liquid coursing through plants…? Ha! Not only are racial, ethnic, or cultural groups no better than any other, they're barely different from anything found in a garden or a park in fundamental ways!

Another item touched upon in Oladipo's pages, without being named, was the notion of *terroir*, the ecosystem in any given place. Wine lovers the world over look for just the right blend of soil, topography, and climate to grow their favorite grapes. They do this knowing that all of these factors will come through in the flavor profile of the final product, a uniquely characteristic blending of a given cultivar, vineyard, region, and annual weather patterns. Oladipo's Nigerian honey makes good, strong bread; it is made by bees choosing flowers that thrive in a hot, dry climate (2011, p. 264). When mindfully approaching ingestion, we may taste the *terroir* in each sip, each nibble of nourishment; we might profoundly experience the flavor of an entire ecosystem in any given moment.

I focus on the perception of flavor because, like color, we may all perceive it a bit differently. Some of us may have never pondered these concepts, never been guided through trying to taste the shoe leather in a crystal glass shaped pool of burgundy liquid. Was it

influenced more by the iron porphyrin, or the encircled magnesium? Was it the human influence on flavor creation, or the earth supporting growth and holding rainfall in fermentable fruit? If it wasn't produced via practices of indigenous people, how is any given experience with it any different owing to its alien status?

Bob the naturalist showed his ire, yanking *alien* plant matter from its place (Oladipo, 2011, p. 266). Nevermind that he was there to lead a tour group, not to maintain the space. Nevermind that the plant was brought there by humans, and now thrives in its new home. Such was his displeasure that he spat, winding himself up, while ending the natural development of a small patch of his distraction from the shoulds he was disseminating to an eager, if not ignorant, audience. I wonder why he didn't identify more closely with this cousin, when he was described as openly adoring another cousin only one moment prior. I wonder if he's ever set aside time to think about the parts they all shared, to listen to their wisdom, to indulge in the innate attraction and spiritual affinity built into every human as biophilia (Rogers, 2019).

I'm committed to working with locally indigenous cultivars, xeriscaping to minimize resource impacts, and the systems thinking in permaculture, when I imagine future gardens. I fail to recall a time when I felt disgust for an invasive being, apparent in Bob's presentation among his tour group, such that it compelled me to abandon my focus. I left destructive and domineering ivy in place as long as possible to avoid overly dried soil when I rebuilt my yard. I listened for the guidance offered by plant and fungi cousins, and in doing so made space for an explosion in animal visitations. It seemed that a willingness to explore being was all that was needed for natural processes to thrive in an urban yard. I stopped doing things to shape the space

in ways I preferred, and started to hear what service the space wanted from me. All it took was dedicated presence, honoring the life surrounding me by maintaining awareness.

The way that I have long spoken with plant, animal, and elemental friends informs most of this perspective. While these heathen connections have been ridiculed, these relationships have done more to sustain my longevity than those I am required to maintain to pass through human society with minimal harm. Through exploration of divinity, the common and mystical properties in everything I encounter, I am not only experiencing more depth in the flavors, sounds, and colors in nature, I endeavor to hold space for all of them. Horticulture therapy, nature-based therapy, ecotherapy, … reconnecting people to simpler, more healthful practices, honoring earth time and seasonal cycles … these are my future. I've been leaning on so much more support than merely human company has ever afforded. These are skills I can share with others who struggle to be among the masses (especially when the "m" is silent).

Acknowledging dyadic focus in connection as a strong personal preference, even in those one-to-one encounters I am engaged in relationship to everything within and surrounding our shared context. These dyadic encounters are not subject-object focused from this perspective, they are communion with *terroir*. Despite years of unresolved struggle to maintain access to spaces where a quick visual scan of those present might single me out as not like the others, I invite difference while honoring universality. This practice is supported by the knowledge that we share the same biochemical foundations as enzymes, plants, vitamins, various animals, and unfamiliar groups of humans. "With so many lives so intricately enmeshed in the same soil, it is not only the deepest roots that matter in nature" (Oladipo, 2011, p. 268).

References

Dayan, F. E. & Dayan, E. A. (2017, February 6). Porphyrins: One Ring in the Colors of Life. In *American Scientist.* https://www.americanscientist.org/article/porphyrins-one-ring-in-the-colors-of-life

Lensen, M. & Rierson, E. & Geurts, H. & van Beurden, J. & Aalbers, R. (2011, October 17). Porphyrin rings: self-assembling catalyst molecules. Radboud University Nijmegen. https://www.vcbio.science.ru.nl/en/fesem/applets/porphyrin/

Oladipo, J. (2011). Porphyrin Rings. In *The Colors of Nature : culture, identity, and the natural world* (A. H. Deming & L. E. Savoy, Eds.; pp. 263–268). Milkweed Editions.

Perkins, M. (2019). What Is Animism? In *Learn Religions*. https://www.learnreligions.com/what-is-animism-4588366

Rogers, K. (2019). Biophilia hypothesis. In *Encyclopædia Britannica*. https://www.britannica.com/science/biophilia-hypothesis