The *Thalweg* of Currents: Naturalist Environmental Education

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Abstract

This paper aims to (re)consider environmental education (EE) through the lens of a mystery/knowledge continuum. It revisits the currents of EE identified by Lucie Sauvé and juxtaposes these with a typology of the senses of mystery. Philosophically and theoretically informed, the paper concludes that a naturalist current *of EE optimally invokes a* skeptical-sacred *sense of mystery, where knowledge is in relation to mystery. A naturalistic current of EE offers a distinct way of considering reality, which has implications for EE and its constituents:* thinking, pedagogy, learning, and curriculum. *Of Sauvé's fifteen established currents of EE, we argue that a naturalist current could serve as the* thalweg, *or valley-way, of currents of EE for metaphoric, etymological, philosophical (epistemological and ontological), and educational reasons.*

Résumé

La visée du présent article est de (re)considérer l'éducation à l'environnement sous l'angle d'un continuum entre mystère et connaissance. Il revisite les courants de l'éducation à l'environnement définis par Lucie Sauvé et les juxtapose à une typologie des sens du mystère. En s'appuyant sur des ouvrages philosophiques et théoriques, l'article conclut que le courant naturaliste permet d'établir un rapport optimal entre mystère et connaissance, un sens du mystère sceptique-sacré. Le courant naturaliste et sa façon distincte d'analyser la réalité peuvent façonner l'éducation à l'environnement et ses composantes (pensée, pédagogie, apprentissage et programme d'études) de façon à développer cette perception chez l'apprenant. Parmi les quinze courants définis par Sauvé, nous retenons le courant naturaliste comme le thalweg, ou chemin de la vallée, d'une éducation à l'environnement fondée sur un raisonnement métaphorique, étymologique, philosophique (épistémologique et ontologique) et éducatif.

Mots-clés **:** éducation à l'environnement, mystère et connaissance, sens du mystère sceptique-sacré, courant naturaliste, pensée, pédagogie, apprentissage, programmes d'études

Keywords*:* environmental education, knowledge/mystery, skeptical-sacred sense of mystery, naturalist current, thinking, pedagogy, learning, curriculum.

In our phenomenology of knowing (Karrow & Harvey, 2015; Karrow, 2010) we explored the relationship between what we "know" and what we "don't know". In that work, we refer to what we "don't know" (i.e, the unknown) as *mystery* and what we "know" as *knowledge*. The authors acknowledge this is an oversimplification of the relationship on the mystery/knowledge continuum and that in certain cultures/ethnicities what counts as knowledge may be labelled by others as mystery, and vice versa. We position ourselves as Western scholars actively learning about other cultural/ethnic senses of mystery (McKinley & Smith, 2020; Mika et al., 2018, Mika, 2017, 2015) that may be labelled in the West as "mystery," when they are, in fact, other forms of knowledge (e.g., spiritual, intuitive, etc.) (Karrow & Harvey, 2021). Furthermore, our explorations have revealed intimate, complex, and mutually sustaining relationships between knowledge in relation to mystery: "mystery is the constancy of departure; knowledge the approximation of arrival" (Karrow, 2010, p. 164). This primordial[1] relationship between mystery/knowledge accommodates a "wider frame of reference for mystery within other cultures/traditions" (Karrow & Harvey, 2021, p. 14). As such, it would be fair to conclude that a particular view of knowledge (e.g., scientific) might result in a particular sense of mystery (denied). This was a major finding of our previous work (Harvey & Karrow, 2016; Karrow & Harvey, 2015; Karrow & Harvey, 2021). The purpose of this paper is to (re)consider environmental education (EE) through the lens of a mystery/knowledge continuum. In doing so, it brings to the fore certain philosophies of reality (e.g., naturalism or absolutism). We argue such philosophies of reality, and their relationship within the context of EE, have remained largely tacit. By bringing conscious attention to one's philosophy of reality through the mystery/knowledge continuum, we propose that a (re)consideration of EE is possible by way of revisiting the currents of EE, as identified by Luci Sauvé (2005), and juxtaposing these with our typology of the senses of mystery (Karrow & Harvey, 2015). Following this introduction, we provide a summary of our philosophical orientation and major theoretical influences. We then move on to explore four specific objectives circumscribed by our work: (a) a literature review on the topic of mystery and its relationship with knowledge as well as the development of our typology of senses of mystery [herein mystery typology]; (b) a mapping of the currents of EE[2] (Sauvé, 2005) onto our mystery typology (Karrow & Harvey, 2015) (Figure 1); (c) an interpretive analysis of the naturalist current of EE and why might it serve as the foundation for other currents of EE; and (d) a discussion of the implications this may have for (re)considering EE, with a focus on the general aims of education and their constituents: *thinking, pedagogy*, *learning,* and *curriculum* (Schwab, 1978).[3] We conclude with a summary highlighting our findings, while anticipating avenues for future research.

Philosophical Orientation and Theoretical Perspectives

Although primarily inspired by Heidegger's thinking (1953/2000; 1966; 1927/1962), this paper is broadly influenced by the philosophies of metaphysics, science, and theology, as well as their longstanding relationship with the domains of mystery and knowledge. An extensive literature review of the relationship between mystery and education (Karrow & Harvey, 2015) confirms Lyotard's (1979) hypothesis of the postmodern paradigm, that the status of knowledge alters as societies evolve.

As societies evolve, so too do their views of mystery/knowledge. For instance, during pre-modern times (ancient–1650s) knowledge of the world was frequently vested in the authority of a deity, that ultimate truth could be known, and that this truth could be arrived at through revelation. As accepted interpretation of divine knowledge, theology revealed this knowledge to would-be subjects predisposed to revelation. In contrast, during modern times (1650s –-1950s), political and educational institutions (i.e., governments and universities) asserted authority over knowledge. Theology became subordinate to these social institutions. Empirical knowledge, established through the senses (i.e., modern science, and the philosophy of reason or logic) was epistemologically favoured. Truth came to be viewed as objective and verifiable. Postmodernity (1950s – present), has approached knowledge of the world as less hierarchical and more diffuse: knowledge presented by way of traditional authority, in addition to what constitutes truth, becomes circumspect. Epistemological diversity, through multiple ways of knowing—revelation, empiricism, reason and logic, intuition, spiritualism, relationality—is accepted. According to Lyotard (1979), toward the peak of postmodernity, knowledge *is* information, a commodity of exchange, and something rendered exterior through various technologies.

The history of knowledge, its sources and epistemologies, generally eschews mystery. What relationship, if any, does mystery share with knowledge? During pre-modern times, given that the source of knowledge was primarily theistic and epistemologically revelatory, knowledge encompassed a sacred and mystical quality. Knowledge associated with transcendence indicates that some other-worldly being beyond oneself is in "control," with the accompanying response of reverence and humility. Undeniably and inevitably, there is a spiritual relationship between any people and their world. Unless a divinity declares what is known, and what is not, what there is to know remains a mystery. Initially, humans experienced a more primordial relationship with mystery/knowledge. The two were undifferentiated during this pre-modern age. Taylor (2007) refers to such a period of undifferentiation as *disenchantment*.

> . . . the portrait of the world we have lost, one in which spiritual forces impinged on porous agents, in which the social was grounded in the sacred and secular time in higher times, a society moreover in which the play of structure and anti-structure was held in equilibrium; and this human drama unfolded within a cosmos. All of this has

> been dismantled and replaced by something quite different in the transformation we often roughly call disenchantment (p. 61).

In contrast, modern understandings of knowledge tend to exclude mystery, and mystery equated with the unknown and human ignorance: should a thing remain unknown this is often viewed with disdain, and analogous to a state of human ignorance. In such binary constructions, the unknown is commonly presaged upon the known at all costs, in an effort to vanquish ignorance.

In a final contrast, a postmodern understanding of knowledge sees it as a commodity of exchange, operating on a strict assumption of knowledge *as* information. There is minimal consideration of the unknown, let alone the status of human ignorance, as all knowledge can be accessed, purchased, or traded. Knowledge then is a "known" commodity, important in its availability, accessibility, transferability, and exchangeability (i.e., in today's parlance, "mobilization"). In effect, the dynamic between mystery/knowledge has been cleaved. Knowledge has been grasped and contained for the purposes of manipulation.

Against this historical backdrop, it is important to recognize there are certain philosophical positions on reality that frame our beliefs and attitudes toward knowledge and its relationship with mystery. In brief, reality can be viewed as a continuum framed by two idealist positions—*naturalism* and *absolutism* (Cooper, 2002). Along a continuum, at one extreme are naturalists, who believe humans are the sole conveyors of reality. Humans, in their various capacities, are viewed as capable of discerning structures of the natural world and making meaning from them. At the other end of the continuum are absolutists, who believe that humans only access a small fraction of the natural world. Despite small windows of meaning gleaned from these natural structures, humanity must console itself by coming to understand that there are limits to human structures that construct meaning, understanding and comprehension. To over-simplify, pre-modern times can be characterized by a tendency to favour theology, in a variety of historical forms (e.g., pantheism, polytheism, and multiple versions of monotheism) as a realm of experience to function as the sense-making structure. Theology's diverse forms helped humanity navigate its relationship with the natural world (e.g., natural disasters in premodern times could understood as acts of god(s)) (Cornfield, 2018).

As previously noted, mystery/knowledge were largely undifferentiated during premodern periods. Developments within philosophy, and subsequently science, defined knowledge as a product of quantifiable experience, which led to knowledge and mystery becoming clearly differentiated. A net tendency to marginalize mystery for the sake of knowledge emerged (for instance, a natural disaster during modern times, as cited above, can now be understood as a meteorological or climate phenomenon explicable through scientific investigation). With the advent of the postmodern, and the inevitable marginalization of mystery by knowledge *as* information, a somewhat ironic interest in reviving mystery in our lives appears to be developing (Cooper, 2002;

Heidegger, 1927/1962; Jones, 2009). This recognition of the role mystery plays in co-constituting reality is not dissimilar to the general project of deconstruction, where binary opposites are positioned in such a way that each is revealed as essential to the other's constituate meaning (Derrida, 1995). (Here again, invoking the example of the natural disaster above, there is the understanding that both the theological and scientific realms of experience can play a part in interpreting such phenomena). Currently, this can be seen playing out through Indigenous narratives *and* scientific theories, where both provide descriptions *and* explanations of climate change (Aikenhead, 2001; Fernández-Llamazares & Cabeza, 2022).

Typology of Senses of Mystery and Mapping EE Currents

Literature Review and Development of the Typology

Our work leading up to the development and presentation of our mystery typology began several years ago. Initially interested in the topic of mystery and its relationship with knowledge, and how this might influence environmental education, we conducted a literature review on the topic.

An extended scan of the topic of mystery identified several key texts. Beginning with Bernard Verkamp's book, *The Senses of Mystery: Religious and Non-Religious,*(1997) we began to visualize a map of mystery's religious[4] and non-religious domains (henceforth the reader should read these as "spiritual" and "non-spiritual domains") (Figure 1).

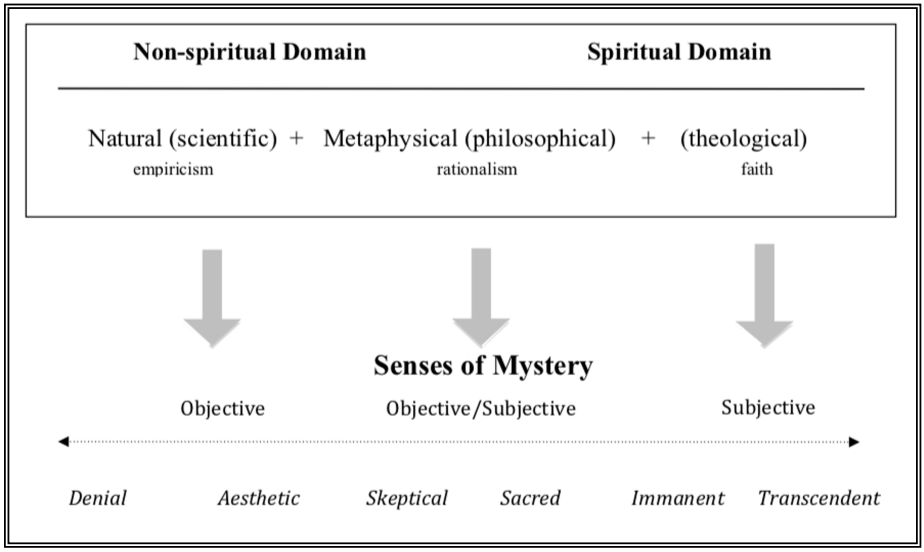

Figure 1. Typology of Senses of Mystery: Domains, Realms of Experience, and Senses of Mystery

Despite Verkamp's (1997) theological background and his proclivity to examine a [spiritual] sense of mystery in great detail, he does recognize a natural or [non-spiritual] sense of the term. Searching further, we discovered Richard Jones's (2009) work, *Curing the Philosopher's Disease: Reinstating Mystery in the Heart of Philosophy*. Jones outlines an argument re-instating traditional philosophy with the topic of mystery, examining how religion and science have largely marginalized its traditional role in the discussion of mystery. Jones helps confirm and extend Verkamp's (1997) spiritual and non-spiritual domains.

Lastly, during our initial foray into the topic, several colleagues recommended David Cooper's book, *The Measure of Things: Humanism, Humility, and Mystery* (2002). Cooper delves into mystery from a metaphysical perspective, meshing Eastern and Western traditions, as well as continental and analytical philosophies, together with past and contemporary traditions. He argues, mystery functions as the "measure of things" (p. 335) by successfully bridging absolutists' and humanists' contrasting claims of reality (which represent differing philosophical camps where it comes to explaining why things exist). But what is being measured?

> To measure our lives, then is to measure... both our comportments and our conceptions. Under the former bland term fall our purposeful activities and projects, and the evaluations, commitments, norms, moods, and sensibilities these typically register. Under the equally bland latter term fall the conepts we use to think and speak about the world, our empirical beliefs and wider 'world views'(p. 335).

Verkamp's (1997), Jones's (2009), and Cooper's (2002) texts help us develop our mystery typology (See Figure 1). We were able to use these works to strategize a more detailed and focused literature review using scientific, philosophic, and theological epistemes. This was useful in familiarizing ourselves with a complex terrain. Our preliminary review of these works allowed us to begin to map the scholarly terrain of mystery (see Figure 1). Non-spiritual and spiritual domains of mystery directly influence the senses of mystery we may experience in our lives as contemporary beings. The non-spiritual domain concerns itself with the natural or physical world (or "reality," per se). In contrast, the spiritual domain is concerned with things beyond reality. A non-spiritual domain of mystery can result in three distinct senses of mystery: mystery as *denied*, *aesthetic*, or *skeptical* (see Figure 1), whereas the spiritual domain of mystery results in *sacred, immanent,* and *transcendent* senses of mystery (Verkamp, 1997; Jones, 2009). We summarize each set of the three senses of mystery in this order: first, those derived from a non-spiritual domain, and second, those resulting from a spiritual domain.

Moreover, Jones's (2009) work helped us identify the epistemes at play in non-spiritual and spiritucal domains of mystery. We were able to relate domains of mystery with epistemes, what we refer to as "realms of experiences". Regarding the respective histories of philosophy, theology, and science, it became evident that mystery can be experienced through these realms of experience. Referring

to Figure 1, the non-spiritual and spiritual domains can be subdivided into broad natural (scientific), metaphysical (philosophical), and spiritual (theological) realms of experience. Suggested here is a continuum of experience where the natural can become metaphysical, and in turn, the metaphysical can become theological, as well as alternative constuctions. As such, they are not discrete categories, per se; nor is the movement implied to take place from left to right, or in reverse, along the continuum.[5]

Non-spiritual Domain and the Senses of Mystery

A non-spiritual domain may result in a sense of mystery as *denied*. This sense of mystery represents one extreme position along a spectrum of senses of mystery. As the name implies, this sense of mystery is one that "denies mystery." Rooted in the enlightenment, the disciplines of modern philosophy and empirical science, efforts directed toward understanding reality, were compelled to eradicate mystery. Mysteries came to be viewed as problems that could, given enough time, be solved either through rationalism or empiricism.

A second possible sense of mystery derived within the non-spiritual domain is that of an *aesthetic* sense of mystery. While still rooted in rationalism and empiricism, this sense of mystery claims that while all aspects of reality can and may eventually be known, it is a state of affairs that in no way diminishes a sense of mystery. In fact, the sense of mystery it evokes is akin to that of aesthetics, or beauty, which is further characterized in terms of various emotional responses (i.e., wonder and awe, and specific attributes of material and form, including "proportion," "order," "harmony or symmetry," "unity," "integrity and perfection," "clarity," and "radiance" (Verkamp, 1997, pp. 24-35)). Whereas the deniers of mystery claim to "demystify" nature, regarding aesthetics as a source of mystery in the first place moves beyond mere problem-solving, to embrace and celebrate the rationality of the universe as something that makes the solution to the world's problems possible. In this case, it is rationality that evokes wonder and reverence. Such a sense of mystery is both cognitive and emotional, and associated with the beauty inherent to a work of art. In the words of Moritz Schlink (1963), who captures the sentiment of this sense: "The more we know of the world, the more we shall marvel at it; and if we should know its ultimate principles and its most general laws, our feeling of wonder and reverence would pass all bounds" (p. 24).

A *skeptical* sense of mystery, unalike the previous two senses of mystery, is still a derivative of the non-spiritual domain, and the product of our realization that our dependency on rationality and empiricism is limited. The use of the term "skeptical" is somewhat misleading, in the sense that one may conclude that our sense of mystery is derived through the exercise of "skepticism." Rather, Verkamp (1997) is suggesting we remain skeptical of deriving a sense of mystery solely from rationalism or empiricism. Moving the epistemological foundation of mytery beyond rationalism and empiricism fundamentally shifts

it toward one based more on spirituality; and a view of knowledge founded more on faith. In other words, there are limits to human understanding because reason and empiricism cannot illuminate all there is to know about our world. There may be other ways of "knowing" beyond reason or empiricism. A variety of thinkers throughout history have subscribed to a skeptical sense of mystery, proposing a variety of well-reasoned arguments to support their conclusions. Our intent here is not to summarize the these arguments, but rather focus upon a camp of philosophers who alternatively argue that the skeptical sense of mystery is the result of what Milton Munitz (1965) refers to in the title of his book, as *The Mystery of Existence*. The mind's realization of our existence in the world around us is what brings this sense of mystery into focus. Heidegger's (1953/2000) infamous question, "Why is there anything at all, or something, rather than nothing?" (p. 9) is another example of the confrontation of our mind with the world. Such a skeptical sense of mystery represents a significant shift from the natural realm into the metaphysical. For an accessible survey of the variety of attempts to explain *the mystery of existence* Jim Holt's (2012) book *Why Does the World Exist?*, is helpful. As this particular 'mystery' (the mystery of existence) has existential connotations we defer to the metaphysicians to sort through the semantic quagmire. The objective of a skeptical sense of mystery is to use philosophical metaphysics to cast a "skeptical cloud" over conventional epistemological avenues (e.g., rationalism and empiricism) that have traditionally denied mystery. Mystery, then, is not simply "denied" nor elevated through "aesthetics" and the feelings or emotions that it invokes, but rather, the possibility for mystery is preserved through skepticism of why and what our existence in the world means.

Spiritual Domain and the Senses of Mystery

As mentioned at the outset of this section, spiritual domains of mystery result in *sacred*, *immanent*, and *transcendent* senses of mystery, primarily mediated through a realm of metaphysical experience, and pursued rigorously by the disciplines of philosophy and theology. While various spiritual traditions uphold a common belief in mystery as "something more," they differ in terms of what the "something more" might be.

A *sacred* sense of mystery experiences "something more" as something that is "totally other" (Verkamp, 1997, p. 67). As such, spiritual peoples' sense of mystery is closely linked with a sense of the sacred. In contrast, a non-spiritual people tend to view nature more homogenously, meaning they make no distinction between sacred and profane events, while spiritual people tend toward viewing nature in heterogeneous ways. Nature, spiritual people contend, consists of people, places, times, things, and actions, and is interpreted along a continuum between sacred *and* profane characteristics. The "something more" that exists beyond reality is that which is "totally other", or "holy" or "Godlike," in and beyond nature (67-84).

A sense of mystery as *immanent* is also derived from the spiritual domain. It views the "something more" as "something within." This is its distinguishing feature. God and nature are distinct; yet God's presence is, or may be experienced as, a spiritual force within the phenomena of nature. Thus, spiritual people tend to experience a sense of mystery as being associated with a sense of the immanent presence of God *within* the phenomena of nature.

The last spiritually derived sense of mystery is that of a sense of mystery as *transcendent*. Transcendence means "something beyond," what may be viewed as normal or physical, however it is important to recognize that spiritual traditions differ on their conception of transcendence. Exploring these more fully is beyond the scope of this paper. Important for our purposes is how what is essential to a spiritual transcendental sense of mystery is the "something more" of the spiritual experience, thought or felt to lie "beyond" the present world (Verkamp, 1997, p. 107).

Common to all three spiritual senses of mystery is a degree of skepticism. While all three agree there is something lacking in our understanding of God, they differ as to the reasons for this "lack." Some feel this lack is simply the limits of human comprehension, and that given enough time, we may come to know all there is to know about the spiritual phenomenon, and as a result, the particular sense of mystery in question will disappear. In contrast, others contend their spiritual sense of mystery is due to the unlimited nature of God's being, undoubtedly and forever beyond the reach of human comprehension. In this way, the more one knows about God, the more mysterious God becomes. One is literally and figuratively blinded by the light of God's stupefying brilliance. Humanity, nonetheless, is open to experiencing rapture in the face of the universe's beauty, and the holy mystery that shines from within or beyond the cosmos (Karrow & Harvey, 2015).

Mapping EE Currents onto the Mystery Typology. A preliminary mapping of scientific, feminist, and naturalist currents of EE onto our mystery typology is revealing. These three currents of EE approximately align with the binary categories delimiting our mystery typology. And while we could have exhaustively mapped the remaining currents of EE onto our typology, this would have resulted in a confusing and unwieldy manuscript. Using these three, rather than all fifteen currents of EE can illustrate the trend and point of our discussion. We should acknowledge that, as with any exercise of this kind, it is one fraught with a desire for things to "align," and here this may not be the case. However, we find that some general patterns hold as reasonably true. For instance, a scientific current of EE (Sauvé, 2005) (Figure 2) views the environment as an object of study, where the aim of EE is to acquire knowledge of the environment while developing skills related to the scientific method. This tends to emphasize more cognitive and experiential pedagogical approaches with activities oriented toward the study of phenomena; observation; demonstration; and experimentation:

[here it may be useful to denote that these qualities are: defined as; or characterized as...] hypothetic-deductive research activity (Sauvé, 2005, p. 33).

Such a current of EE maps clearly onto our typology in the non-spiritual domain, where a scientific realm of experience results in a sense of mystery as denied (Figure 1). Such a view has little to no tolerance of mystery in relation with knowledge. At the other extreme, a feminist current of EE (Sauvé, 2005) (Figure 2) views the environment as an object of solicitude, where the aim of EE is to integrate feminist values into the human-environment relationship. In contrast, it tends to favour pedagogical approaches that are intuitive, affective, symbolic, and spiritual, as well as creative/aesthetic employing strategies such as case studies, immersion, creative workshops, and communication and exchange activities (Figure 2). Such a current of EE tends toward a more spiritual domain, where a theological realm of experience could result in a sense of mystery as sacred, immanent, perhaps even transcendent (Figure 1). What distinguishes the spiritual domain from the non-spiritual domain is a sense that there is something more to reality that we cannot explain; something more that exists beyond reality in a sacred sense of mystery than that which is totally other, holy, or Godlike; as such, in or beyond nature. An immanent sense of mystery supplies how "something more" lies within nature, and that in a transcendent sense of mystery something more lies beyond (Verkamp, 1997).

In contrast to the scientific and feminist currents of EE is the naturalist current (Sauvé, 2005) (Figure 2). Nature qua *nature* is the conception of the environment. The aims of EE are to reconstruct a link with nature through such pedagogical approaches that are sensorial, cognitive, affective, experiential, creative/aesthetic, using such activities that are immersive, interpretive, or discovery-based (Sauvé, 2005). There is a distinct blend here of non-spiritual and spiritual domains, deeply rooted in a philosophical (metaphysical) realm of experience. Along our typology, this could be located toward the center, resulting in a skeptical-sacred sense of mystery (Figure 1). This view of mystery is rooted in the belief that we cannot know all there is of reality and, that under certain circumstances, knowledge of everything may elude us. As such, it borders on a skeptical sense of mystery, positing there is something more to reality and that something more is vested in the other, or sacred et al. senses of mystery (nature itself, a holy figure, or deity). Although beyond the scope of this paper, an argument as to why this is desirable has been articulated in previous works (Harvey & Karrow, 2016; Karrow & Harvey, 2015).

Interpretive Analysis of the Naturalist Current of EE. The naturalist current of EE is of particular interest to us. Specifically, we assert that a naturalist current of EE might serve as a foundation or thalweg (from the Old German, *thal* = valley; + *weg* = way) (Oxford University Press, n.d., *thalweg*) for the currents of EE. "Thalweg" is the "valley-way" or deepest part of the river channel eroded through

time. As such, while it may change slightly depending on the rise and fall of all "currents," it persists, remains, and is ever-present. It is the fundamentum for the mass of intermingling, intertwining, and meandering currents that course through the valley way. It flows more slowly, yet deliberately, and pervasively underneath a river. Through its depth, volume, and density it stabilizes the valley way, providing some degree of structure and form to a dynamic river over time.

We believe a naturalist current of EE is well-suited to *found* other currents of EE for several reasons, and while Sauvé's (2005) 15 currents of EE are generally presented a-historically (notwithstanding the division of the 15 currents into two temporal periods, e.g., "Longer Tradition" vs. "Recently Emerged" (p. 13)), a-ideologically, and a-philosophically, we believe there may be benefits to doing so more explicitly. Building and extending upon Sauvé's original metaphor of "currents," we invoke the root metaphor of the river by considering the thalweg or valley-way. Our playful interpretation of the concept in the previous paragraph extends meaning to the context of our discussion. In an analogous way, a naturalist current of EE could function as a thalweg to other currents of EE. This is further supported through an etymological tracing of the root of naturalist in the form of the word, *nature*.

The Latin philosopher Eriugena defined nature as the totality of all things, including both the *things which are* as well as *those which are not* (Moran & Dew, 2021, John Scottus Eriugena, 3.1). The word nature itself poignantly encapsulates the mystery/knowledge dynamic, and in this sense is its linguistic and conceptual precursor. In our desire to ameliorate such binary distinctions, nature, or as is the case here, a naturalist current of EE, beautifully accomplishes this aim. Philosophically, the naturalist current of EE, as juxtaposed with our typology of senses of mystery, neatly bridges domains, realms of experience, and the spectrum of senses of mystery residing near a skeptical-sacred sense of mystery. Such a sense of mystery beautifully reflects the intrinsic and mutually sustaining relationship between a sense of mystery as completely denied and at the other extreme, a sense of mystery as transcendent, where mystery trumps any claim to knowledge. What this means, is the relationship between mystery with knowledge is attuned, balanced, and mutually sustaining. Cooper (2002) refers to this as a *doctrine of mystery* where the absolutist and naturalist camps of reality achieve some measure of co-existence. Such a doctrine of mystery, we argue, serves as the philosophical footing to develop an original philosophy of education that nurtures an ethos of mystery for environmental education theory and practice (Karrow & Harvey, 2023). The broad parameters of such a philosophy of education and the implications this may have on environmental education theory and practice are intriguing to ponder as we further this work.

Deriving further from philosophy, there are epistemological and ontological reasons to advocate why a naturalist current of EE might found other currents of EE. By virtue of the skeptical-sacred sense of mystery, where knowledge is in

relation with mystery, questions about how we come to know, or what counts as knowledge, come to the fore. Here, then, there is a co-mingling of non-spiritual with spiritual domains, and scientific, philosophical, and theological realms of experience. So too, our ways of knowledge—respectively through empiricism, rationalism, and faith—may each be accessed and celebrated. Epistemological diversity becomes the norm (Figure 1). Such epistemological diversity also has an effect on ontology, where the net effect of this becomes realized through the dissolution of the traditional object and subject binaries (see Figure 1 for the continuum of subject/object relationships). One might claim, epistemology and ontology become more closely attuned in that through knowledge one develops ontologically; and conversely, through our ontological development one gains knowledge (Figure 1). Lastly, educationally speaking, a naturalist current of EE, because of its metaphoric and etymological possibilities; and further, the philosophical (epistemological and ontological) functions that are gained, inherently cultivate two of three fundamental aims of education. These aims include inculcation of the learner into the *forms of knowledge* (Plato) and the *developmental needs* of the learner (Rosseau) (Egan, 1997). We would go further and add that in achieving the first two, the third aim, *socialization* of the learner (Dewey) is also satisfied. We will expand on this later.

Implications for Re-considering Environmental Education in the Light of the Skeptical-Sacred Sense of the Knowledge/Mystery Dynamic

How Does this Situate us to (Re)-consider EE?

By mapping three of Sauvé's (2005) currents of EE onto our mystery typology, we are able to discern several things not overtly apparent. First, we created a space to acknowledge that mystery and knowledge share an important dynamic. Second, through the mapping exercise itself, we identified one current (there are others within the fifteen as identified by Sauvé) that is premised on the understanding that mystery and knowledge share this important dynamic and that this is rooted in a philosophical position somewhere between the movements of naturalism and absolutism. This reveals the role(s) that various philosophical positions on reality can have on our currents of EE and exposes, in our view, one of several deficiencies with Sauvé's (2005) exercise. That being, the classification exercise does not explicitly consider philosophical viewpoints undergirding EE currents and presents them in a fashion somewhat a-philosophical and a-historical. This engenders several misconceptions: namely EE currents are contemporaneous, discrete, and unrelated movements; also, epistemologically and ontologically undifferentiated. This begs the additional question concerning larger educational aims. Beyond Sauvé's (2005) general and vague descriptors of "Dominant Approaches" (i.e., infer pedagogical) and

"Examples of Strategies" (i.e., infer pedagogical exercises or techniques) there remain outstanding questions as to what types of thinking each current fosters, what pedagogical approaches are appropriate, how learning is viewed, and the wider curricular implications this all entails. We propose to shift the frame of reference slightly from discounting a philosophy of reality and presents as a-historical, to one that fully recognizes how a philosophy of reality and its historical relationship and development ground currents of EE, allowing us to re-consider EE in the process. As such, we can now turn our attention to the second question: what remains to be re-considered?

Current	Conception of Environment	Aims of Environmental Education	Dominant Approaches	Examples of Strategies
Naturalist	Nature	Reconstruct a link with nature.	Sensorial, Cognitive, Affective, Experiential, Creative/Aesthetic	Immersion; interpretation; Sensorial games; Discovery activities.
Conservationist/ Resourcist	Resource	Adopt behaviours compatible with conservation. Develop skills related to environmental management.	Cognitive, Pragmatic	Guide or code of behaviours; 3 Rs set of activities; Environmental audit; Conservation projecct.
Problem-solving	Problem	Develop problem-solving skills; from diagnosis to action.	Cognitive, Prgamatic	Case study; issue analysis; Problem-solving project.
Systemic	System	Develop systemic thinking; analysis and sythesis, toward a global vision. Understand environmental realities in view of enlightened decision-making.	Cognitive	Case study; Environmental system analysis; Construction of ecosystem models.
Scientific	Object of study	Acquire knowlege in environmental sciences. Develop skills related to the scientific method.	Cognitive, Experiential	Study of phenomena; Observation; Demonstration; Experimentation; Hypothetico-deductive research activity.
Humanistic/ Mesological	Living Milieu	Know and apreciate one's milieu of life; better know oneself in relation to this living millieu. Develop a sense of belonging.	Sensorial, Affective, Cognitive, Experiential, Creative/Aesthetic.	Itinerary; Landscape reading; Study of milieu; investigation.
Value-centred	Field of values	Adopt ecocivic behaviours. Develop a system of ethics.	Cognitive, Affective, Moral	Analysis of values; Clarification of values; Criticism of social values.
Holistic	Holos, Gaia, All, The Being	Develop the many dimensions of one's being in interaction with all aspects of the environment. Develop an 'organic' understanding of the world and participatory action in and with the environment.	Holistic, Organic, Intuitive, Creative	Free exploration; visualization; Creative workshops; Integration of complementary strategies.
Bioregionalist	Place of belonging, Community project	Develop competencies in/for local or regional community ecodevelopment.	Cognitive, Affective, Experiential, Pragmatic, Creative	Exploration of our shared milieu; Community project; Project of local or regional ecodevelopment.

Current	Conception of Environment	Aims of Environmental Education	Dominant Approaches	Examples of Strategies
Praxic	Lotus of action/ reflection	Learn in, by, and for environmental action. Develop reflexive skills.	Praxic	Action-research; Reflective posture in activites or project.
Socially Critical	Object of transformation, Place of emancipation	Deconstruct socio-environmental realities in view of transforming them and transforming people in this process.	Praxic, Reflexive, Dialogic	Analysis of discourses; Case study, Debate Action-research.
Feminist	Object of solicitude	Integrate feminist values into the human-environment relationship.	Intuitive, Affective, Symbolic, Spiritual, Creative/Aesthetic	Case study, Immersion, Creative workshop, Communication & exchange activity.
Ethnographic	Territory, Place of identity, Nature/culture	Recognize the close link between nature and culture. Clarify one's own cosmology. Valorize the cultural dimension of one's relationship with the environment.	Experiential, intuitive, Affective, Symbolic, Spiritual, Creative/ Aesthetic	Fables, Stories and legends; Case study; Immersion; Modelling; Mentoring.
Eco-Education	Role of interacation for personal development. Locus of identity costruction	Experience the environment to experience oneself and to develop in and through it. Construct one's relationship with the "other-than-human world."	Experiential, Sensorial, Intuitive, Affective, Symbolic, Creative	Life story; Immersion; Exploration Games; Introspection; Sensitive listening; Subjective/ objective *alternance*
Sustainable Development/ Sustainability	Resource for economic development. Shared resource for sustainable living	Promote economic development that takes care of social equity and ecological sustainability; Contribute to such develpment.	Pragmatic, Cognitive	Case study; Social marketing; Sustainable consumption activities; Sustainable living managment project.

Notes. (1) The original figure has been reproduced from Sauvé, L. (2005). Currents in environmental education: Mapping a complex and evolving pedagogical field. *Canadian Journal of Environmental Education, 10*, 11-37. (2) There is no order of hierarchy implied in the presentation of the various currents of EE.

Figure 2. Characterization of Fifteen Currents in Environmental Education (Sauvé, 2005).

What Remains to be (Re)considered?

The obvious answer here is that Sauvé's (2005) seminal yet critical work on characterizing currents of EE could be re-visited[6] to trace, more carefully, how all currents of EE are informed by philosophies of reality, their historical relationships, and their educational implications. This would be an excellent time to re-visit Sauvé's work in lieu of what has transpired since it was originally conceived. In doing so, a more adequately and thorough relationship between the currents of EE may be illustrated, bringing them into a contemporary context, moving them forward by considering their broader educational aims in greater

detail, and by suggesting the implications this may have on its constituents: thinking, pedagogy, learning, and curriculum.

Previously, we referenced three generally recognized aims of education as including inculcation into the forms of knowledge, the developmental needs of the learner, and socialization (Egan, 1997). The three currents of EE examined here—scientific, feminist, and naturalist—are representative samples of the fifteen currents of EE, in that they span our typology of senses of mystery and reflect the foundational philosophies of reality and their historical relationships to one another (Cornfield, 2018). In turn, they have the capacity to reveal certain predilections and aims of education more broadly, over and above others. To over simplify, a scientific current of EE inherently supports an aim in education that favours the pursuit of knowledge, while marginalizing mystery. A feminist current of EE, in contrast, is more oriented toward an aim that education emphasize the developmental needs of the subject. A naturalist current of EE, due to its alignment with a skeptical-sacred sense of mystery, inherently supports the first two aims of education with their emphases on inculcation to forms of knowledge (e.g., mathematics, the physical sciences, the human sciences, history, religion, literature and the fine arts, philosophy and moral knowledges, Hirst (1974).) and the developmental needs of the learner. We suggest in supporting these two aims of education, the third—socialization—necessarily occurs.

To support our claim that a naturalist current of EE can be found in other currents of EE, we suggest an exploration of how the three aims of education shape the constituents of thinking, pedagogy, learning, and curriculum. As the naturalist current of EE is consistent with a skeptical-sacred sense of mystery, we may take the opportunity to exercise ways of knowing and thinking that are both calculative and meditative (Heidegger, 1966). In other work, we have demonstrated (Harvey & Karrow, 2016) how emotional ways of knowing can support diverse types of thinking. For example, the affect of wonder is a precursor to two derivative emotions: curiosity, suited to the development of calculative thinking; and awe, which nurtures more meditative forms of thinking. In terms of pedagogy, beyond the vague descriptions provided by Sauvé (2005), the question arises as to what teaching approaches might best support such varied types of thinking. Because of the range of thinking implied here, considering approaches to teaching able to provide the opportunity to stimulate, develop, and nurture the capacity for both calculative and meditative thinking becomes that much more desirable. A skeptical-sacred sense of mystery ideally orients pedagogical activities in ways that could foster diversities of thought—calculative and meditative—the details of which are only suggestive (Harvey, 2009). What implications are there for learning? The question in and of itself immediately foregrounds an aim of education directed toward the needs of the individual. What pedagogical strategies are most appropriate for the developmental needs of the student? In what ways might a skeptical-sacred sense of mystery orient

the aim of education? At the outset of this section, we conceded a sense of mystery of this kind attunes well with the first and second aims of education—knowledge and developmental needs—with the third socialization—occurring as a consequence of the previous two. When considering the developmental needs of the learner, this aim immediately moves to the forefront. This too is an area for further consideration. Lastly, what implications are there for curriculum? Accepting a traditional definition of curriculum as *what* material is to be taught and *how* we shall go about teaching it (Petrina, 2004), there are significant implications with a naturalist current of EE as it reflects a skeptical-sacred sense of mystery. A careful sorting of the relationships between the three aims of education would further shape the content of the curriculum, and how it would be taught to children.

Summary

In (re)considering EE we have centred our work on Sauvé's (2005) seminal and important characterization of the currents of EE. In its time, Sauvé's work was critical in beginning to identify and trace the different currents of EE through the exercise of classification and then nomenclature. What we bring to the fore is consideration of philosophical views of reality, their historical relationships, and further consideration of realms of experience (scientific, philosophic, and theological) by focusing the discussion on senses of mystery and their resulting mystery/knowledge dynamic. By doing this, we shift the focus of the classifying and naming exercise that Sauvé's (2005) currents of EE is premised on, to one founded on a philosophy of reality and the historical relationship(s) illustrated by considering pre-modern, modern, and postmodern paradigms.[6] This shifting of the framing of EE currents, and their revealing manner, allows us to entertain how EE might be (re)considered. As this happens, questions surrounding the implications this process has for education, and the three traditional aims of education—forms of knowledge, developmental needs, and socialization—are brought to the fore (Egan, 1997). We have briefly explored the implications such aims may have on education's constituents: thinking, pedagogy, learning, and curriculum. Recognizing our exploration is cursory, we concede there is much work to do in our (re)consideration of EE. For instance, there is the outstanding task of better relating the relationship between the three aims of education more clearly, and whether these are contradictory (Egan, 1997); or, whether a naturalist current of EE may offer unique ways to accomplish each approach. There is also the larger task of teasing out the granular details of how these divergent aims of education are further characterized through the constituents of thinking, pedagogy, learning, and curriculum.

Endnotes

1. We use the term primordial in the sense of ancient, prior to the differentiation between knowledge and mystery.
2. We have opted to use the scientific, feminist and naturalist currents as our continuum of senses of mystery map neatly onto them. As they frame the limits of this continuum and as the remaining currents of EE align approximately with these limits, trends can be deduced for illustrative purposes strengthening our argument.
3. Although Schwab (1978) originally conceived of the four education curriculum commonplaces as including: teaching, learning, subject and milieu, we have adapted this scheme for our purposes. We are thinking beyond 'curriculum' per se, to the larger phenomenon of public education where thinking, pedagogy, learning and curriculum characterize the larger phenomenon.
4. At the suggestion of one reviewer, we have used the term "spiritual" vs. "non-spiritual" to refer to Verkamp's (1997) religious and non-religious designations.
5. The authors recognize a certain historical logic prevails where theological discourse evolved into philosophical (metaphysical) and presently scientific realms of experience (See: Cornford, 2018).
6. Personal communications with Dr. Sauvé have hinted at her desire to revisit her (2005) publication (Currents in environmental education: Mapping a complex and evolving pedagogical field) and update her original scheme.

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