

Philosophical Hermeneutics and Critical Pedagogy in Environmental Education Research and Practice

Valéria Ghislotti Iared, Federal University of Sao Carlos, Brazil; Ariane Di Tullio, Federal University of Sao Carlos, Brazil; Phillip G. Payne, Monash University, Australia; & Haydée Torres de Oliveira, Federal University of Sao Carlos, Brazil

Abstract

The contributions and challenges of Gadamer's philosophical hermeneutics and Freire's critical pedagogy to research and practice in environmental education are considered. We present the authors' main concepts and relate them to the principles of critical environmental education that have guided our work in Brazil. Although a raft of current non-anthropocentric theories question the pivotal role of language in representing experience, our purpose is to outline a critical dialogical perspective suitable for particular education contexts. The respect for the otherness of nature implicit in this process can lead to the recognition and acceptance of our own selves and new forms of solidarity and respect for others, including nonhuman nature. Our interpretive-pedagogical approach informs some of the underlying principles or practices of the critical dimension of environmental education and its research.

Résumé

Les contributions et défis de l'herméneutique philosophique de Gadamer et de la pédagogie critique de Freire quant à la recherche et la pratique en éducation environnementale sont examinés. Nous présentons les principaux concepts de ces auteurs et les associons aux principes d'éducation environnementale critique qui ont orienté nos travaux au Brésil. Bien qu'un ensemble de théories non anthropocentriques ayant actuellement cours mettent en question le rôle essentiel de la langue dans la représentation de l'expérience, notre objectif consiste à énoncer une perspective dialogique critique destinée aux contextes d'enseignement particuliers. Le respect du caractère unique de la nature inhérent à ce processus peut mener à la reconnaissance et à l'acceptation de soi-même et à de nouvelles formes de solidarité et de respect pour autrui, y compris pour la nature non humaine. Notre approche interprétative et pédagogique est à la base de certains des principes ou pratiques sous-jacents de la dimension critique de l'éducation environnementale et de la recherche dans le domaine.

Keywords: hermeneutics, critical pedagogy, critical environmental education, Paulo Freire, Hans-Georg Gadamer

Introduction

The aim of this study is to articulate Hans-Georg Gadamer's and Paulo Freire's work as fulfilling a significant purpose of environmental education research and practice. In doing so, we describe the authors' main concepts about education and critical pedagogy that we believe satisfy a more ecological approach that is less anthropocentric and offers a more inclusive dialogue.

There has been longstanding debate about environmental education being in, about, and/or for the environment. Fien's (1993) inclusion of "for" highlighted the importance of "ideology critique" within the "knowledge interests" of the field. Robottom and Hart (1993) described three paradigms for the field of environmental education research: postpositivism, interpretivism, and critical theory. In so doing, they introduced to environmental education research the importance of ontology and epistemology being incorporated into methodological deliberation. Gough (1993) outlined how poststructuralism might influence inquiry. Payne (1999) advocated for a "humanly constructive" ontology and phenomenology of environmental education to underpin the socially critical epistemological perspective of Fien, Robottom, and others concerned about the praxis claimed by critical theorists. Russell and Hart (2003) explored the emergence of new genres of inquiry in environmental education research and highlighted transitions underway in qualitative and interpretive inquiry. Sauvé (2005) mapped 15 curriculum and pedagogical "currents" in environmental education, including those critical perspectives identified above. Following Robottom and Hart's (1993) and Lotz-Sisitka, Fien, and Ketlhoilwe's (2013) analysis of "traditions and new niches" in environmental education research, the orientations of "empirical-analytical," "interpretivism/constructivism," "critical," "poststructural," and "critical realist" research have different ontological, epistemological, and methodological presuppositions and typically preferred methods. Irrespective, the role of interpretation (and representation of it) is central to all. Generally, Reid and Scott's (2006) analysis of articles published in the first 10 years of the *Environmental Education Research* journal, between 1995 and 2004, concluded that the complexity of the field increased.

Following Payne (2009), the notion of how research is "framed" assumes a heightened level of significance within this complexity and diversity of different interpretations and representations of the field's efforts. One consequence is that environmental education researchers are invited to carefully consider the critical nature of their research problem, questions, purposes, and rationale but also the congruence, commensurability, and coherence of their research plan and its positioning geographically and linguistically/culturally. Also, Payne (2009) asserted that the configurations of pedagogical practices and research on environmental education in the Anglo-speaking world are, indeed, complex and often confusing. The terms "sustainability" and "place," for example, have

different underlying assumptions and interpretations. Some might be “critical”; others “business as usual.” Interpretive complexity expands when “other-than-Anglo” cultures transfer or translate key concepts like “critical,” noting, for example, Canaparo’s (2009) postcolonial notion of the “geo-epistemology” and its sourcing in Latin America as a “location of knowledge.” Gonzalez Gaudiano and Lorenzetti (2013) highlighted the “critical-transformative environmental thinking style” in the junctures and disjunctures of environmental education research in Latin America. Hence, our selective task is to bring Gadamer and Freire into a critically interpretive conversation about the post-colonial prospects of environmental education research in a globalizing discourse.

Any geo-epistemology, as well as orientation to research summarized above, is shaped ontologically and epistemologically by the enigmatic flux over time-space and “place memory” (Trigg, 2012) and by an uneven historical mix of demographic, geographic, historical, linguistic, social, technological, cultural, global, and ecological factors (Payne, 2009). An Amazonian geo-epistemology is different to its counterpart in São Paulo, or the coastal regions of Brazil. These factors influence the ways of a specific culture, community, or group, and cannot be separated from the land, territory, and space in which that geo-epistemology has been locally, regionally (or socio-ecologically) created, developed, and established (Canaparo, 2009). Other authors, for example Araújo-Oliveira (2014), Dussel (2000), Iani (1993), and Santos and Meneses (2010) have already argued for acknowledging the social and historical particularities in Latin America to advocate comprehensions, criteria, and methods for their own framing. Again, the questions of language, discourse, interpretation, meaning, description, explanation, and representation cannot be avoided critically and reflexively.

Canaparo (2009) defines the space of Latin America as a peripheral part of Western/European culture, meaning it is still influenced by conceptions and constructions of more “powerful” civilizations. Beyond the factors listed above, in framing research we consider two “basic” geo-culturally distinctive processes that have greatly shaped the emergence of Latin America as a locale of knowledge and the way environmental education can, potentially, reframe its preferred approaches to inquiry and interpretation. They are: (a) the military dictatorship in the 1960s and 1970s in many Latin-American countries and, in parallel, the contributions of classical authors who have influenced the sociological and educational thoughts in that period, most of them based on Marx (for example, Dussel, 2000; Freire, 2005; Leff, 2008), and (b) the continuous processes of immigration and emigration, including colonization and its reshaping in the scientific and epistemic field (Santos & Meneses, 2010). We incorporate into our critical interpretations the oppressive model (Freire, 2005) of colonization that deprived Brazil more detailed legacy of Indigenous traditional ecological wisdom and practices. Sato, Silva, and Jaber (2014) described how colonialism in Brazil “led to the destruction of natural resources as well as ... the expropriation and genocide of various Indigenous peoples” (p. 104).

With these broad trends and issues in mind, this paper provides a reinterpretation of environmental education in those “other” political and social contexts of Brazil whose geo-epistemology and cultural-geographic background emphasizes the initial colonization of Indigenous knowledge in the 1500s, slavery of Black and Indigenous people, military dictatorship between the 1960s and 1980s, and postcolonization. In Brazil, however, this geo-epistemological framing defies easy consensus because there is a diversity of environmental education perspectives (Layrargues, 2004). Oliveira (2008) mapped the various influences found in Brazilian popular education and environmental education movements. From this context, Freire is a Brazilian educator well known in English-speaking countries who wrote in exile about the relation between “oppressed and oppressor” in education, where the “banking” concept of pedagogy was developed. Later, in Brazil, Freire was involved with various environmental movements that added to his views about education, which we detail below.

Brazilian environmental educators typically take a position between two of the main political and social currents of environmental education (Czapski, 2008): the conservative and the critical. The first, based on a reductionist worldview that leaves out the complex relationships among different aspects of the environment, results in an individualistic and behaviourist pedagogical practice. It tends to prioritize the cognitive dimensions of the educational process, the transmission of “environmentally friendly” knowledge, the authority of the rational over emotional interests, theory over practice, knowledge divorced from reality, and the technical over the socio-political dimension. This conservative, positivist, cognitivist, and behaviourist epistemology and pedagogy is well-known in the Anglo-west and has attracted a considerable amount of critique over the past 30 years, particularly from authors whose critical contributions introduced this article.

On the other hand, critical environmental education in Brazil promises profound changes in society (Carvalho, 2006; Guimarães, 2004) because it is committed to the oppressed and desires significant transformations of socio-environmental reality through praxis, in which creative thinking and practice complement each other to build a new understanding of the world. This process is experienced by the subject in relation to the collective and the world, so that the subject and society are mutually transformed (Guimarães; 2004, 2005). Currently, with the elaboration of theoretical and methodological environmental education fields, framing an investigation or a practice as critical is not sufficient, presuming the notion of “critical” might be based on different approaches (such as Marxism or interpretive theory). Therefore, in the current Brazilian scene, further reflection is needed on what it means to be critical and what our theoretical and methodological assumptions are.

The approach of philosophic hermeneutics has been used in most research related to environmental perception and interpretation of the senses/meanings

of educational processes for learners in Brazil (Campos & Cavalari, 2009; Carvalho, Grün, & Avanzi, 2009; Grün, 2005). One of the key criticisms of this approach is its lack of purpose to change social reality, because it addresses certain phenomena only (i.e., that which currently manifests itself in place, and does not incorporate critique of the historical and structural facts or objective realities of that phenomenal/existential place, such as the military influence and immigration/emigration/colonization issues outlined above). Moreover, research and practice on environmental education based on the dialogic pedagogy of Freire is still popular in Brazil (Avanzi, Carvalho, & Ferraro Júnior, 2009; Logarezzi, 2010; Pato, Sá, & Catalão, 2009; Reigota, 2007). On the other hand, Anglo-western scholars in environmental education have only sporadically drawn on Freire's critical theory (see for example, Kahn, 2009), despite greater attention in general education theory (McLaren & Kincheloe, 2007).

Freire was influenced by different theories, so his literature is extensive and expresses distinct concerns relevant to the period of his life that we explain later, resulting in diverse possibilities with other contemporary researchers in environmental education. For example, some research groups in Brazil complement Freire with Dussel (Oliveira & Sousa, 2014) or Habermas (Logarezzi, 2010). We engage Gadamer and Freire in an interpretive discussion, or conversation. We believe that critical environmental education can provide a deeper dialogical reading and understanding of a more complex world, contributing to the ongoing processes of the transformation of a reality that historically places the self within a social and environmental crisis.

Kincheloe and McLaren (2002) have already written about the insertion of a critical theory into the "hermeneutic circle" that fosters a critical hermeneutics required to more fully grasp our lived experience within the cultural structures in which we are historically immersed. We believe that hermeneutic phenomenological approaches carefully developed in environmental education provide for pedagogically tactful thoughtfulness: situational perceptiveness, discernment, and depth of understanding (van Manen, 1990). These ingredients of environmental education are fundamental in Brazil—a large country with a massive population whose different regional or micro geo-epistemological variations in "place" present social and environmental vulnerabilities. Hence, there is a persistent need for critically interpretive dialogue in, between, and across variation and vulnerability. From the hermeneutic understanding generated by this dialogic undertaking, we might better seek the transformation of the subject (Freire, 2005), enhancing the "humanly constructive" agencies (Payne, 1999) of, potentially, socially critical actors (Fien, 1993) whose "praxis" against social and ecological injustices is warranted. Thus, this article outlines some of the key contributions of Gadamer's philosophical hermeneutics and Freire's critical pedagogy to practice in environmental education, within a (eco) dialogical-critical perspective as a possible pathway.

Gadamer's Philosophical Hermeneutics

Gadamer is rarely considered in Anglo-western theories of environmental education and its research. Sammel (2003) argued the key contribution of Gadamerian hermeneutic phenomenology to environmental education was to understand the gap between meaning and action that educators assign to critical environmental education. In our view, one of Gadamer's most important contributions to philosophical hermeneutics was the broadening of the concept of interpretation beyond the search for the meaning of words, and into the question of understanding in itself (Lawn, 2006). According to Gadamer, all human understanding is interpretation, since it is impossible to separate the subject from the world (object), given that the world is seen from a particular human perspective (Lawn, 2006). Thus, hermeneutics is present in all human experiences in and of the world, whether scientific or not, so that beyond the scientific method Gadamer was critical of, there are other ways of knowing reality, such as through art and history (Gadamer, 2004). According to Gadamer (2004), the search for truth occurs on the horizon of any tradition to which we belong, so that our historicity (as geo-cultural-epistemologies) provides the condition of our understanding. Thus, the identity of a subject or a group of people is socially and culturally constructed, intimately connected to the past. Tradition is a specific cultural environment in which individuals belong. History can condition us but it cannot always constrain us, making transformation possible (Lawn, 2006). As we are "ontologically" beings (Lotz-Sisitka et al., 2013; Payne, 1999), we inherit pre-existing prejudices and pre-understandings of the world that we also epistemologically inhabit. But this embedded and embodied pre-understanding does not retain a rigid, fixed, and unchanging validity; it is enhanced and modified by newly acquired knowledge and new meanings (Testa, 2004).

From their historicity in relation to the world, traditions, and prejudices, each person has a horizon, which, according to Gadamer (2004), "is the range of vision that includes everything that can be seen from a particular vantage point" (p. 301). However, the horizon is not fixed, but in a process of constant shaping as we face our prejudices (Gadamer, 2004; Testa, 2004). Understanding occurs when one horizon is placed in contact with another and there is a process of fusion of horizons. Hence, understanding does not mean that an active subject projects meaning on to an inert, dead object, or even that s/he abandons that horizon to surrender to another. Rather, subjects broaden their horizons to integrate the oneself with the "other" one, producing new meanings from the meeting of two worlds (Gadamer, 2004), so the transformation of the subject happens in relation to the other (Domingues, 2009). This fusion of horizons is only possible through language. Thus, "being that can be understood is language" (Gadamer, 2004, p. 470). For Lawn (2006), Gadamer criticizes the conception of language as an instrument of thought, responsible for representing an exact image of the world or states of mind. For Gadamer (2004), language

is fundamentally social, cultural, and historical—it is the way we access the world and therefore, all our understanding is structured linguistically. This shift of language to the centre of philosophical reflection is known as the “linguistic turn” (Hermann, 2002).¹ This hermeneutic phenomenon exposes the intimate relationship between thought and speech. According to Gadamer (2004), thinking happens in saying, and language finds its fulfillment in dialogue.

Freire's Critical Pedagogy

Freire devoted himself to thinking about the intersubjective relationships in the educational universe, and that dialogue is a central category in overcoming the hegemonic rationalities used against the oppressed. Freire developed his theory based on two philosophical thoughts: the dialectic of Hegel and dialectics of Marx. The Hegelian dialectic is the consciousness of the acts: the subject “I” has the ability to think about the future, to build reality, and it is a process that occurs from inside (subjective) to the outside (reality). Marx extended the analysis to the social system: the historical and political context to which we belong is a determinant of our thoughts and actions. For Marx, the transformation of reality would only be possible in the process of action or praxis, taken from outside (social system, political, economic) to inside (subjective).

Freire combined these two ideas by proposing that people are able to transform their reality, but within their own reality and historical context. Thus, phenomenology and Marxism tend to converge in Freire's theory. Freire developed his thoughts according to historical concerns and political considerations so, in Brazil, there are different views about Freire that can be reinterpreted as a *continuum*. Some scholars insist that Freirean thought is conservative and that he served as a non-critical educator (Saviani, 1985), while others approach him from a postmodern perspective (Nóvoa, 1998). Freirean thought cannot be viewed as attaining consensus among all Brazilian educators and researchers.

As an educator concerned with ethics and politics, Freire believed in universal ethics. His ethics must be built through dialogue, which, for him, is essential to overcome the ethical crisis of our time. In his most famous work, *Pedagogy of the Oppressed*, he discussed our vocation to be *Fully Human*,² and this is done in social relations, and developing an understanding of them. Indeed, Freire (1985, 1994, 1998, 2005, 2007) stressed the development of dialogical relationships as the primary medium and resource for becoming *Fully Human*. Real dialogue³ happens in the encounter between people willing to listen to each other and express their opinions for the evaluation of the other. It is not intended to defeat a person but to let a topic become known, enabling participants to undertake self-reflection of their views that might then produce a new, different, or “other” concept. Thus, there is no definitive interpretation; the linguistic constitution of the world leaves it open to all kinds of interpretation, since it is linked to the

vital experience of subjects and is not bound by strict methodological rules. Language characterizes all human experience in the world, because the structure of our experience is formed and transformed in it (Hermann, 2002). Here is where we most clearly see a convergence of Gadamer and Freire in the interpretation and understanding of social “relations” in time and space, and according to the intersubjectivity of their locations of living and knowing.

Although Freire’s *Pedagogy of the Oppressed* is his best-known work, we consider its overemphasis reduces the richness of his theoretical corpus. In *Pedagogy of Hope*, Freire (1994) revisited his earlier *Pedagogy of the Oppressed* and expanded some concepts such as consciousness and gender issues. Also, Freire (1994) commented about his participation during the construction of the *Treaty on Environmental Education for Sustainable Societies and Global Responsibility* (Earth Council, 1993), a key classical reference document for Brazilian environmental educators. Freire was involved with the NGOs’ *Treaty*, bringing to discussion the importance of coupling environmental and social issues. In so doing, we believe it is important to reclaim and restore Freire within the socio-ecological theorization and practices of environmental education, as he was a thinker who actively participated in generating one of the base documents referred to in Brazil in our environmental education approach. We consider that the critical pedagogy of Freire puts together social and environmental dimensions.

Possibilities for Critical Environmental Education based on Gadamerian Philosophical Hermeneutics and Freirean Critical Pedagogy

As we have already pointed out, our primary concern was to engage two highly influential authors often used in environmental education research in Brazil to contribute to an approach that covers more issues of Brazilian realities. We highlight some concepts that, in our view, are crucial for environmental education research and practice, as discussed in the theories of Gadamer and Freire, and then present how they possibly work together.

In *Pedagogy of Hope*, Freire (1994) asserted that nobody puts consciousness in anyone. We all have a consciousness that turns to something. What allows the learning process is a *self-awareness* made in dialogue. This is the process that Freire called “conscientization” (see also Fien, 1993). For us, one of the challenging tasks of environmental education is the ongoing possibility of critical pedagogy. To understand how the self-awareness (Freire, 1994) process occurs, we need to understand the idea of the pre-understanding (Gadamer) and flux with critical consciousness (Freire). Pre-reflective knowledge or pre-understanding is discussed also by Heidegger (1962) and Merleau Ponty (1962) in their respective phenomenologies. The hermeneutic interpretation of dialogue produces meaning and highlights the impossibility of separating subject in and from the world. It is the lived experience in the world which is already interpreted (van Manen,

1990). “Pre-reflective” refers to a level of the individual experience which is prior to language and does not begin and does not end in language, and is sensitive to and reflects our engagement with humans and nonhumans. We consider this especially important when dealing with environmental education, because we pedagogically highlight human beings with/in/as the world, which addresses perceptions, experiences, and human feelings in relation to the environment. The formative process of this lived experience, ethics, and politics dimensions can generate heightened self-awareness, so relevant research questions must be encouraged to interpret this phenomena in reformulating the environmental education practice of critical pedagogy.

“Banking education,” as defined by Freire (2005), is an act of “depositing” established and verified knowledge: the students patiently receive the contents and amounts deposited by educators and file or memorize them mechanically. While we need to allow people to have access to knowledge in order to transform the world aesthetically and ethically (Freire, 1985), knowledge ceases to be “gained from experience” and becomes transmitted or narrated in a one-way relationship that denies dialogicity. This banking view of education minimizes or even negates learners’ creativity by discouraging their thinking and therefore their transformation (Freire, 2005). Freire (1998) argued that teaching is transforming learners’ naive curiosity into a critical position, as a defense against the irrationalities arising from the excess of rationality in our highly technological time. Freire goes further, saying that teaching is whetting curiosity, being willing to risk, to emancipate, and going in the opposite direction to the pacifying effect of “banking education” (Freire, 2005). It is in opposition to this banking education that we believe in a critical school and environmental education. Since to educate is a form of intervention in the world (Freire, 1998), educator and learner assume a socio-environmental and political role and contribute to the transformation of the hegemonic paradigm.

The split between culture and nature is promoted through the objectification of nature and an anthropocentric ethic of human mastery of nature (Grün, 2006). Some researchers in Brazil (Grün, 2006; Marpica, 2008) identified that, in the curriculum, this orientation led to some “areas of silence”⁴ that sometimes amounted to a complete exclusion of the relationship of human societies with nature throughout history (Grün, 2006). The deconstruction of subject-object, human-environment, and nature-culture dualities promoted by the hermeneutic approach and the consequent understanding of human existence in a dialogical relationship with the world implies that understanding the world is also understanding oneself (Carvalho, Grün, & Avanzi, 2009). Thus, the reflections proposed here are not about an abstract human being and not about a world without people, but about people in relation to everything that exists, seeking to build a new ethic, neither anthropocentric nor utilitarian, but ecocentric (Abram, 1996; Payne, 2013). Payne (2013) adds the political and affective dimensions as an essential articulation to shift the policy and the curriculum on environmental education.

Following this approach to the nature-culture binary, environmental education sees value in tradition as a way to understand the historicity of human relationships with the environment. It is in the fusion of the horizons of tradition (past) and interpreter (present) that new meaning is produced (Grün, 2006), and that knowledge and more sustainable practices can be constructed by reflecting on and questioning the human actions that led to the current environmental problems (Grün, 2006). “Environmental Diagnosis” is a procedure that is widely used in Brazil in the early stages of the environmental education process because it allows a deeper understanding of the reality to be studied. It consists of an interpretation of the data collected in environmental mapping by the people involved in that reality, on what is to be defined as problematic and what is desirable in an educational process (Ferraro Junior, 2007). To start from local realities of environmental diagnostics does not deny the global. Indeed, these spheres are closely related. Freire (2007) understood the world as directly linked to his backyard, his childhood, and all the people he met. He highlighted the specific and universal spheres by pointing out that before being a citizen of the world he was a citizen of Recife, his hometown. The more a person is rooted in their locality, the more chance they have to globalize. Nobody becomes local from global. Environmental diagnosis in environmental education highlights the complex interaction between the cultural, social, and natural realities of a given environment (Carvalho, 1998). One of the critical aims of environmental education is to build meaningful learning processes, linking previous experiences with issues and new experiences that lead to new concepts and meanings. Environmental education’s key principle is to interpret the *reading the world* (Freire, 1994) of people in all its complexity, to dialogue with these subjects the meanings of other ways of being and acting in/with/as nature.

From a philosophical hermeneutic perspective, to educate is to educate yourself (Gadamer, 2011). The educational process is a result of the subject’s experience, and confrontation with the self’s opinions and beliefs (Hermann, 2002). This learning from experience does not mean an individualistic process. On the contrary, it happens through dialogue and intersubjectivity (Freire, 1994, 1998; Gadamer, 2011). Dialogue is central to Freire’s (2005) perspective: “Human beings are not built in silence, but in word, in work, in action-reflection” (p. 88). Here lies another key point to Freire (1994): we are never alone, we are always *With*. Freire (1994) capitalizes *With* to emphasize the importance of what Gadamer (2004, 2011) refers to as the *Other*. In this perspective of educational practice, the educator has a different role: to guide this process. This means to be open to learning, to talk, and to understand other view’s worlds. This is fundamental for environmental education as we live in a world in which many civilizations, ways of life, and thoughts are conflicting and trying to be recognized.

Freire’s pedagogy extends Gadamer’s interpretive ideas and Sammel’s (2003) thoughts as he contributes a political dimension of educational practices.

For Freire (1985, 1994, 1998), all human action is the result of a dialectical relationship between agency and structure. The “macro” structure does not determine individual actions, but influences them. In acknowledging the “macro” structure, the aim of the hermeneutic phenomenological approach is to investigate the lived experience (van Manen 1990) in a “bottom-up” understanding of human agency. Education consists of recognizing what is strange and making it familiar: the subject moves away from her/himself to possess the meaning of the world. Hence, retraining happens when the subject returns to the self from the other. Education is thus an opening for the recognition of otherness, so we can make sense of what comes from outside us, which means to understand the other and cultural knowledge (Hermann, 2002).

Final Thoughts

According to Kincheloe and McLaren (2002), philosophical hermeneutics is concerned with the processes of comprehension while other scholars (framed as critical hermeneutics) shift the research to an understanding of social and political relations which suit the purpose of this study. We accept the limitations of dialogue and language during any attempt to grasp the fullest of reality (or realities), our efforts sometimes being restricted to some (not all) layers of reality (James, 2006). Nonetheless, we still encourage democratic and dialogic processes as essential processes of social-environmental transformations where social inequality and injustices persist, as evidenced in Brazil.

Gadamer and Freire, together, contribute to critical environmental education as Freire extends Gadamer’s theory by adding a more geo-epistemologically and culturally-historically sensitive political and ethical dimension. Our intent was to reflect on the theoretical and geo-epistemological foundations of environmental education practices in Brazil that have been disseminated as critical, by using the viewpoint of philosophical hermeneutics in the belief that the distinguishing feature of such a conversation is the revaluation of the role of subjects in social transformations still in process in Brazil. One of the ways to remain critical in the “new” local-global is to be in favour of the oppressed (Freire, 2005), and following the most recent new materialism turn in theory, the oppressed includes nonhuman beings and things (e.g., Coole & Frost, 2010). To be normatively critical is not only to comprehend the one’s otherness, but to emphasize her/his potential comportments within the ethical and political dimension of environmental education. We need to know clearly for whom we are positioning ourselves.

We have demonstrated the extension of Freire’s work beyond *Pedagogy of the Oppressed* and his approach with social environmental debate. We suggest to environmental educators that a broader reading of his work is appropriate when using his approach of critical pedagogy within a Gadamerian interpretive process.

Notes

- ¹ The excesses of the linguistic turn are now being criticized by new materialists, speculative realists, post- and transhumanists, and post-phenomenologists, in returning to a more object/thing-oriented ontology. The Portuguese translations of these recent turns in Anglo theories/philosophies are rare, and unlikely to be available in the next few years.
- ² *Fully Human* is a concept widely used by Freire. It means that the opportunity is presented to men and women to no longer be treated as object, to be considered subjects of their own history. This possibility is fundamental in the humanistic experience of Freire. It is a radical commitment to praxis.
- ³ For Freire (1994), dialogue is a commitment with the reality transformation. Real dialogue happens when all people involved are transformed.
- ⁴ This concept, “areas of silence,” was originally defined by Bowers (1993).

Notes on Contributors

Valéria Ghislotti Iared is a Doctor of Sciences at Federal University of Sao Carlos, Brazil. **Contact:** valiared@yahoo.com.br

Ariane Di Tullio is a Doctor of Sciences at Federal University of Sao Carlos, Brazil. **Contact:** di.ariane@gmail.com

Phillip G. Payne is an Associate Professor in the Faculty of Education at Monash University, Australia. **Contact:** phillip.payne@monash.edu

Haydée Torres de Oliveira is a full professor in the Department of Environmental Sciences at Federal University of Sao Carlos, Brazil. **Contact:** haydee.ufscar@gmail.com

References

- Abram, D. (1996). *The spell of the sensuous: Perception and language in a more-than-human world*. New York: Vintage Books.
- Araújo-Oliveira, S. S. (2014). Exterioridade: o outro como critério (Exteriority: the other as criteria). In M. W. Oliveira & F. R. Sousa (Orgs), *Processos educativos em práticas sociais: Pesquisas em educação (Educational processes in social practices: Educational research)* (pp. 47-112). São Carlos, Brazil: EdUFSCar.
- Avanzi, M. R., Carvalho, I. C. M., & Ferraro Júnior, L. A. (2009). Um olhar para a produção de pesquisa em educação ambiental a partir do GT Ambiente, Sociedade e Educação, da ANPPAS (A look at the production of environmental education research from the work group of Environment, Society and Education in National Association of Postgraduate

- Studies and Research in Environment and Society). *Pesquisa em Educação Ambiental*, 4(2), 79-93.
- Bowers, C. A. (1993). *Education, cultural myths and the ecological crisis: Toward deep changes*. Albany, NY: State University of New York Press.
- Campos, D. B., & Cavalari, R. M. F. (2009). Fenomenologia e hermenêutica: possibilidades e limites para a Educação Ambiental (Phenomenology and hermeneutics: Possibilities and limits for environmental education). *Rev. Eletrônica Mestr. Educ. Ambiental*, 22, 439-453.
- Canaparo, C. (2009). *Geo-epistemology: Latin America and the location of knowledge*. New York: Peter Lang.
- Carvalho, I. C. M. (1998). *Em direção ao mundo da vida: interdisciplinaridade e educação ambiental/ Conceitos para se fazer educação ambiental (Towards the world of life: Interdisciplinarity and environmental education/Concepts of doing environmental education)*. Brasília, Brazil: IPÊ - Instituto de Pesquisas Ecológicas.
- Carvalho, I. C. M., Grün, M., & Avanzi, M. R. (2009). Paisagens da compreensão: contribuições da hermenêutica e da fenomenologia para uma epistemologia da educação ambiental (Landscapes of comprehensions: Hermeneutics and phenomenology contributions to an epistemology of environmental education). *Cadernos CEDES*, 29, 99-116.
- Carvalho, L. M. (2006). A temática ambiental e o processo educativo: dimensões e abordagens (Environmental issues and the educational process: Dimensions and approaches). In H. C. S. Cinquetti & A. Logarezzi (Orgs), *Consumo e resíduo: fundamentos para o trabalho educativo (Consumption and waste: The base of the educational work)* (pp. 19-41). São Carlos, Brazil: EdUFSCar.
- Coole, D., & Frost, S. (Eds.) (2010). *New materialisms: Ontology, agency, and politics*. Durham, NC, Duke University Press.
- Czapski, S. (2008). *Os diferentes matizes da educação ambiental no Brasil: 1997-2007 (The different tones of environmental education in Brazil: 1997-2007)*. Brasília, Brazil: Ministério do Meio Ambiente.
- Domingues, J. A. (2009). *Diálogo hermenêutico (Hermeneutic dialogue)*. Covilhã, Portugal: Universidade de Beira Interior. Retrieved from www.lusosofia.net/textos/domingues_jose_dialogo_hermeneutico.pdf
- Dussel, E. (2000). *Ética da Libertação na idade da globalização e da exclusão (Ethics of Liberation in the age of globalization and exclusion)*. Petrópolis: Vozes.
- Earth Council. (1993). *Treaty on environmental education for sustainable societies and global responsibility*. Brazil: Non Governmental Organizations (NGOs) International.
- Ferraro Junior, L. A. (2007). MAPPEA: mínima aproximação prévia para elaboração de Programas de Educação Ambiental (Minimum preview approach for preparation of environmental education programs). In Ministério da Educação & Ministério do Meio Ambiente (Orgs) *Mapeamentos, diagnósticos e intervenções participativos no socioambiente (Mappings, diagnostics and participatory interventions in environmental education programs)* (pp. 6-31). Brasília, Brazil: Ministério do Meio Ambiente.
- Fien, J. (1993). *Education for the environment: Critical curriculum theorising and environmental education*. Victoria, Australia: Deakin University Press.
- Freire, P. (1985). *The politics of education*. Westport, CT: Bergin & Garvey.
- Freire, P. (1994). *Pedagogy of hope: Reliving Pedagogy of the Oppressed*. New York: Continuum.

- Freire, P. (1998). *Pedagogy of freedom: Ethics, democracy, and civic courage*. Lanham, MD: Rowman & Littlefield Publishers.
- Freire, P. (2005). *Pedagogy of the oppressed*. New York: Continuum.
- Freire, P. (2007). *Pedagogy of the heart*. New York: Continuum.
- Gadamer, H. G. (2004). *Truth and method*. Translation revised by Joel Weinsheimer and Donald G. Marshall. (2nd ed.). London: Continuum.
- Gadamer, H. G. (2011). La educación es educarse (Education is educate oneself). *Revista de Santander*, 6, 90-99. Retrieved from www.uis.edu.co/webUIS/es/mediosComunicacion/revistaSantander/revista6/nuevasCorrientesIntelectuales.pdf
- Gonzalez Gaudiano, E., & Lorenzetti, L. (2013). Trends, junctures, and disjunctures in Latin American environmental education research. In R. B. Stevenson, M. Brody, J. Dillon, & A. E. J. Wals (Eds.), *International handbook of research on environmental education* (pp. 171-177). New York: Routledge.
- Gough, N. (1993). Environmental education, narrative complexity and postmodern science/fiction. *International Journal of Science Education*, 15(5), 607-625.
- Grün, M. (2005). Gadamer and the otherness of nature: Elements for an environmental education. *Human Studies*, 28(2), 157-171.
- Grün, M. (2006). *Ética e educação ambiental: a conexão necessária (Ethics and environmental education: The necessary connection)*. Campinas, Brazil: Papirus.
- Guimarães, M. (2004). Educação ambiental crítica (Critical environmental education). In P. P. Layrargues (Ed.), *Identidades da educação ambiental brasileira (Identities of Brazilian environmental education)* (pp. 25-34) Brasília, Brazil: Ministério do Meio Ambiente.
- Guimarães, M. (2005). Intervenção educacional: do 'de grão em grão a galinha enche o papo' ao 'tudo junto ao mesmo tempo agora' (Educational intervention: From 'grain by grain the hen fills her belly' to 'all together at the same time right now'). In L. A. Ferraro Jr. (Org), *Encontros e caminhos: formação de educadoras(es) ambientais e coletivos educadores (Meetings and paths: Environmental educators training and collective educators)* (pp. 189-199). Brasília, Brazil: Ministério do Meio Ambiente.
- Heidegger, M. (1962). *Being and time*. New York: Harper San Francisco. (Original work published 1927).
- Hermann, N. (2002). *Hermenêutica e educação (Hermeneutics and education)*. Rio de Janeiro, Brazil: DP&A.
- Iani, O. (1993). *O labirinto latino-americano (The Latin America maze)*. Petrópolis: Vozes.
- James, P. (2006). *Globalism, nationalism, tribalism*. London: Sage Publications.
- Kahn, R. (2009). *Critical pedagogy, ecoliteracy, and planetary crisis: The ecopedagogical movement*. New York: Peter Lang.
- Kincheloe, J. L., & McLaren, P. (2002). Rethinking critical theory and qualitative research. In Y. Zou, & E. T. Trueba (Eds), *Ethnography and schools: Qualitative approaches to the study of education* (pp. 87-138) New York: Rowman & Littlefield Publishers.
- Lawn, C. (2006). *Gadamer: A guide for the perplexed*. New York: Continuum.
- Layrargues, P. P. (Coord.). (2004). *Identidades da educação ambiental brasileira (Identities of Brazilian environmental education)*. Brasília, Brazil: MMA, Diretoria de Educação Ambiental.
- Leff, E. (2008). *Saber ambiental (Environmental knowledge)*. (6th ed). Petrópolis: Vozes.
- Logarezzi, A. M. J. (2010). Educação ambiental em comunidades de aprendizagem: uma

- abordagem crítico-dialógica (Environmental education in learning communities: A critical-dialogical approach). Article published at the 33th Reunião anual da ANPED, Caxambu, MG, Brazil. Retrieved from <http://33reuniao.anped.org.br/33encontro/app/webroot/files/file/Trabalhos%20em%20PDF/GT22-6130-Int.pdf>
- Lotz-Sisitka, H., Fien, J., & Kethoile, M. (2013). Traditions and new niches: An overview of environmental education curriculum and learning research. In R. Stevenson, M. Brody, J. Dillon, & A. Wals. (Eds.), *International handbook of research on environmental education* (pp. 194-205). New York: Routledge.
- Marpica, N. S. (2008). *As questões ambientais em livros didáticos de diferentes disciplinas da quinta-série do ensino fundamental (Environmental issues in textbooks of different subjects of elementary school fifth grade)*. Thesis (Masters in Education) - Centro de Educação e Ciências Humanas, Universidade Federal de São Carlos. São Carlos, Brazil.
- McLaren, P., & Kincheloe, J. (Eds.). (2007). *Critical pedagogy: Where are we now?* New York: Peter Lang.
- Merleau Ponty, M. (1962). *The phenomenology of perception*. London, UK: Routledge.
- Nóvoa, A. (1998) Paulo Freire (1921-1997): a inteireza de um pedagogo utópico (Paulo Freire (1921-1997): The entirety of a utopian pedagogue). In M. W. Apple & A. Nóvoa (Eds.) *Paulo Freire: política e pedagogia (Paulo Freire: Politics and pedagogy)* (pp. 167-187). Porto, Portugal: Porto editora.
- Oliveira, H.T. (2008). Popular education and environmental education in Latin America: Converging path and aspirations. In E. González-Gaudiano & M. Peters (Eds.), *Environmental education: Identity, politics and citizenship* (pp. 219-230). Amsterdam: Sense Publishers.
- Oliveira, M. W., & Sousa, F. R. (Eds.). (2014). *Processos educativos em práticas sociais: pesquisas em educação. (Educational processes in social practices: Education research)*. São Carlos, Brazil: EdUFSCar.
- Pato, C., Sá, L. M., & Catalão, V. L. (2009). Mapeamento de tendências na produção acadêmica sobre educação ambiental (Mapping trends in scholarship on environmental education). *Educação em Revista*, 25(2), 213-233.
- Payne, P. (1999). Postmodern challenges and modern horizons: Education “for being for the environment.” *Environmental Education Research*, 5(1), 5-34.
- Payne, P. (2009). Framing research: Conceptualization, contextualization, representation and legitimization. *Pesquisa em Educação Ambiental*, 4(2), 49-77.
- Payne, P. G. (2013). (Un)timely ecophenomenological framings of environmental education research. In R. B. Stevenson, M. Brody, J. Dillon, & A. E. J. Wals (Eds.), *International handbook of research on environmental education* (pp. 424-437). New York: Routledge.
- Reid, A., & Scott, W. (2006). Researching education and the environment: Retrospect and prospect. *Environmental Education Research*, 12(3-4), 571-588.
- Reigota, M. (2007). O estado da arte da pesquisa em educação ambiental no Brasil (The status of environmental education research in Brazil). *Pesquisa em Educação Ambiental*, Ribeirão Preto, 2(1), 33-66.
- Robottom, I., & Hart, P. (1993). *Research in environmental education: Engaging the debate*. Geelong, Victoria: Deakin University Press.
- Russell, C. L., & Hart, P. (2003). Exploring new genres of inquiry in environmental education research. *Canadian Journal of Environmental Education*, 8, 5-8.

- Sammel, A. (2003). An invitation to dialogue: Gadamer, hermeneutic, phenomenology and critical environmental education. *Canadian Journal of Environmental Education*, 8, 155-168.
- Santos, B. S., & Meneses, M. P. (Orgs.). (2010). *Epistemologias do Sul (South epistemologies)*. São Paulo: Cortez.
- Sato M., Silva, R., & Jaber, M. (2014). Between the remnants of colonialism and the insurgence of self-narrative in constructing participatory social maps: Towards a land education methodology. *Environmental Education Research*, 20(1), 102-114.
- Sauvé, L. (2005). Currents in environmental education: Mapping a complex and evolving pedagogical field. *Canadian Journal of Environmental Education*, 10, 11-37.
- Saviani, D. (1985). *Escola e democracia (School and democracy)*. São Paulo: Cortez.
- Testa, E. (2004). *Hermenêutica filosófica e história (Philosophical hermeneutics and history)*. Passo Fundo, Brazil: UPF.
- Trigg, D. (2012). *The memory of place: A phenomenology of the uncanny*. Athens, OH: Ohio University Press.
- van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York: State University of New York Press.